Cytec Cycom 5250-5 T650 Unitape Gr 145 32% RC
Qualification Material Property Data Report

FAA Special Project Number SP4613WI-Q

NCAMP Test Report Number: CAM-RP-2010-079 Rev C

Report Date: October 10, 2017

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REVISIONS:

Rev	By	Date	Pages Revised or Added
N/C	Kristin Marlett	6/9/2011	Document Initial Release
N/C	Kristin Marlett	6/22/2011	IPS max shear strength removed; new calculations pending
A	Kristin Marlett	9/1/2011	IPS values updated
B	Michelle Man	7/27/2012	Typographical/Editorial Corrections, Data corrections for IPS (Section 2.3.5, 3.5, 4.5)
C	Michelle Man & Vinsensius Tanoto	10/10/2017	Changes made to LT ETW data, Sections 2.1, 2.3.1, 3.1, and 4.1. CNAJC21XJ data is removed

TABLE OF CONTENTS

List of Tables

List of Figures

1. Introduction

1.1 Scope

The test methods and results described in this document are intended to provide basic composite properties essential to most methods of analysis and are consistent with CMH-17G—Composite Materials Handbook for Polymer Matrix Composites. This report contains material property data of common usefulness to wide range of projects. The lamina and laminate material property data have been generated with FAA oversight through FAA Special Project Number SP4613WI-Q, and also meet the requirements of NCAMP Standard Operating Procedure NSP 100. The test panels, test specimens, and test setups have been conformed by the FAA and the testing has been witnessed by the FAA. However, the data may not fulfill all the needs of any specific company's programs; specific properties, environments, laminate architecture, and loading situations that individual companies may require additional testing.

The use of NCAMP material and process specifications do not guarantee material or structural performance. Material users should be actively involved in evaluating material performance and quality including, but not limited to, performing regular purchaser quality control tests, performing periodic equivalency/additional testing, participating in material change management activities, conducting statistical process control, and conducting regular supplier audits.

The applicability of NCAMP material property data, material allowables, and specifications must be evaluated on case-by-case basis by aircraft companies and certifying agencies. NCAMP assumes no liability whatsoever, expressed or implied, related to the use of the material property data, material allowables, and specifications.

This report contains material property data only. Statistical analysis of the data including the calculations of b-basis values is given in a separate report Cytec 5250-5 T650 Unitape Gr 145 32% RC Qualification Statistical Analysis Report NCP-RP-2010-068 N/C. The qualification material was procured to NCAMP Material Specification NMS 226/1 Rev Initial Release dated July 17, 2007. The qualification test panels were cured in accordance with NCAMP Process Specification 81226 “C” cure cycle Rev C released July 23, 2008. The NCAMP Test Plan NTP 2261Q1 Rev A was used for this qualification program.

Part fabricators that wish to utilize the material property data, allowables, and specifications may be able to do so by demonstrating the capability to reproduce the original material properties; a process known as equivalency. More information about this equivalency process including the test statistics and its limitations can be found in Section 6 of DOT/FAA/AR-03/19 and Section 8.4.1 of CMH-17G. The applicability of equivalency process must be evaluated on program-by-program basis by the applicant and certifying agency. The applicant and certifying agency must agree that the equivalency test plan along with the equivalency process described in Section 6 of

DOT/FAA/AR-03/19 and Section 8.4.1 of CMH-17G are adequate for the given program.

Aircraft companies should not use the data published in this report without specifying NCAMP Material Specification NMS 226/1. NMS 226/1 may have additional requirements that are listed in its prepreg process control document (PCD), fiber specification, fiber PCD, and other raw material specifications and PCDs which impose essential quality controls on the raw materials and raw material manufacturing equipment and processes. *Aircraft companies and certifying agencies should assume that the material property data published in this report is not applicable when the material is not procured to NMS 226/1.* NMS 226/1 is a free, publicly available, non-proprietary aerospace industry material specification.

The data in this report is intended for general distribution to the public, either freely or at a price that does not exceed the cost of reproduction (e.g. printing) and distribution (e.g. postage).

1.2 Symbols

ν_{12}^{t}	major Poisson's ratio, tension
με	micro-strain
E_1^{c}	compressive modulus, longitudinal / warp direction
E_1^{t}	tensile modulus, longitudinal / warp direction
E_2^{c}	compressive modulus, transverse / fill direction
E_2^{t}	tensile modulus, transverse / fill direction
F_1^{cu}	ultimate compressive strength, longitudinal / warp direction
F_1^{tu}	ultimate tensile strength, longitudinal / warp direction
F_2^{cu}	ultimate compressive strength, transverse / fill direction
F_2^{tu}	ultimate tensile strength, transverse / fill direction
SBS	short beam strength
ν_{12}^{c}	major Poisson's Ratio, compression
ν_{21}^{c}	minor Poisson's Ratio, compression
$F_{12}^{s5\% \text{ strain}}$	in-plane shear strength at 5% strain
F_{12}^{smax}	in-plane shear peak strength before 5% strain
$F_{12}^{s0.2\%}$	in-plane shear strength at 0.2% offset
G_{12}^{s}	in-plane shear modulus

Superscripts

c	compression
cu	compression ultimate
s	shear
su	shear ultimate
t	tension
tu	tension ultimate

Subscripts

1 – axis; longitudinal / warp direction (parallel to warp direction of reinforcement)
2 – axis; transverse / fill direction (parallel to fill direction of reinforcement)
12; in-plane

Acronyms and Definitions

ASTM	American Society for Testing and Materials
B – Basis	95% lower confidence limit on the tenth population percentile
CV	Coefficient of variation
CTD	cold temperature dry
CPT	cured ply thickness
ETD	elevated temperature dry
ETW	elevated temperature wet
Gr/Ep	graphite/epoxy
norm	normalized
RTD	room temperature dry
SACMA	Suppliers of Advanced Composite Materials Association
SRM	SACMA Recommended Method
Tply	thickness divided by the number of plies provides the thickness average per specimen
wet	specimen with an “equilibrium” moisture content
T, RH	temperature, relative humidity

1.3 NIAR– Cytec 5250-5 Specimen Naming Format

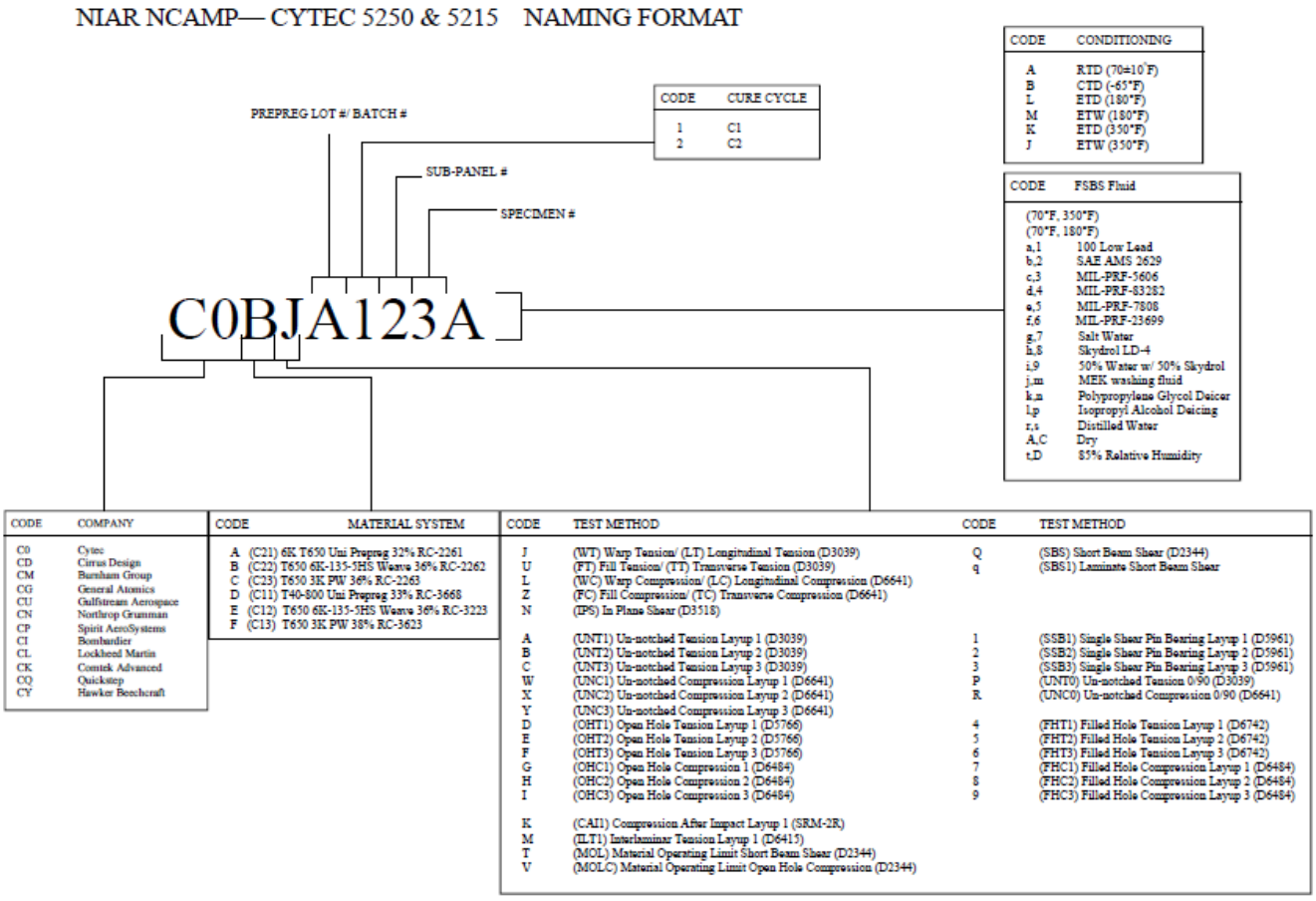


Figure 1-1: Naming Format

1.4 References

ASTM Standards

All testing was in accordance with nationally recognized standards, methods and procedures. Specific mechanical property test methods applicable to the test program in this document include:

- ASTM D2344/D2344M-00(2006) – Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates
- ASTM D3039/D3039M-00(2006) – Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials
- ASTM D3518/D3518M-94(2007) – Standard Test Method for In-Plane Shear Response of Polymer Matrix Composite Materials by Tensile Test of a ± 45º Laminate In-Plane Shear Strength and Modulus
- ASTM D5766/D5766M-02a – Standard Test Method for Open Hole Tensile Strength of Polymer Matrix Composite Laminates
- ASTM D5961/D5961M-05e1 – Standard Test Method for Bearing Response of Polymer Matrix Composite Laminates
- ASTM D6415-06ae1 – Standard Test Method for Measuring the Curved Beam Strength of a Fiber-Reinforced Polymer-Matrix Composite
- ASTM D6484/D6484M-04 – Standard Test Method for Open-Hole Compressive Strength of Polymer Matrix Composite Laminates
- ASTM D6641/D6641M-01e1 – Standard Test Method for Determining the Compressive Properties of Polymer Matrix Composite Laminates Using a Combined Loading Compression (CLC) Test Fixture
- ASTM D6742/D6742M-02 – Standard Practice for Filled-Hole Tension and Compression Testing of Polymer Matrix Composite Laminates
- ASTM D7136/D7136M-05e1 – Standard Test Method for Measuring the Damage Resistance of a Fiber-Reinforced Polymer Matrix Composite to a Drop-Weight Impact Event
- ASTM D7137/D7137M-05e1 – Standard Test Method for Compressive Residual Strength Properties of Damaged Polymer Matrix Composite Plates

1.5 Methodology

1.5.1 Process Definition

For each combination of test, batch and condition, the specimens were selected from minimum two separate panels cured separately as shown in Figure 1-2 unless otherwise specified.

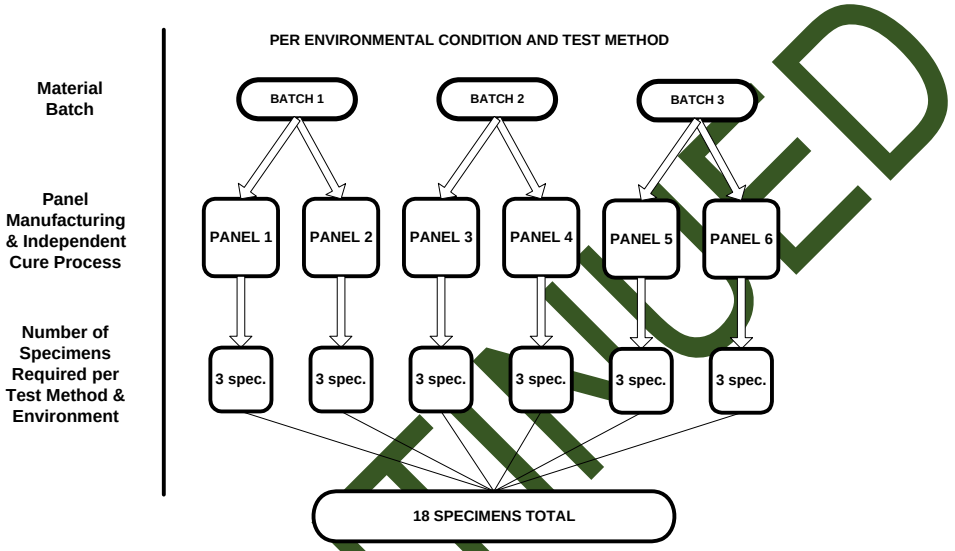


Figure 1-2: Specimen Selection Methodology

All panels were fabricated in accordance with NCAMP process specification 81226 “C” Cure Cycle.

In order to facilitate individual specimen trace ability, individual specimen numbering and/or skewed lines were written or drawn across each sub-panel as shown in Figure 1-3.

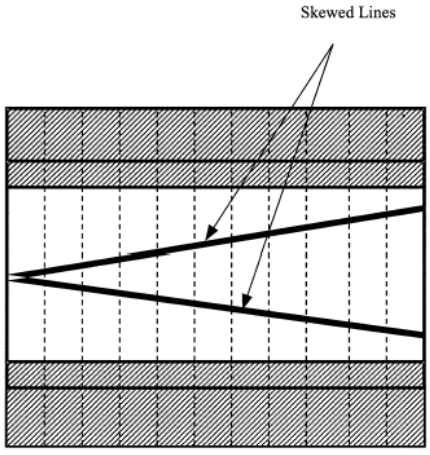


Figure 1-3: Specimen Traceability Line

For the single shear bearing tests, the ASTM D5961 was used with one of the pairs of specimens replaced by a steel fixture. The configuration is shown in Figure 1-4 below.

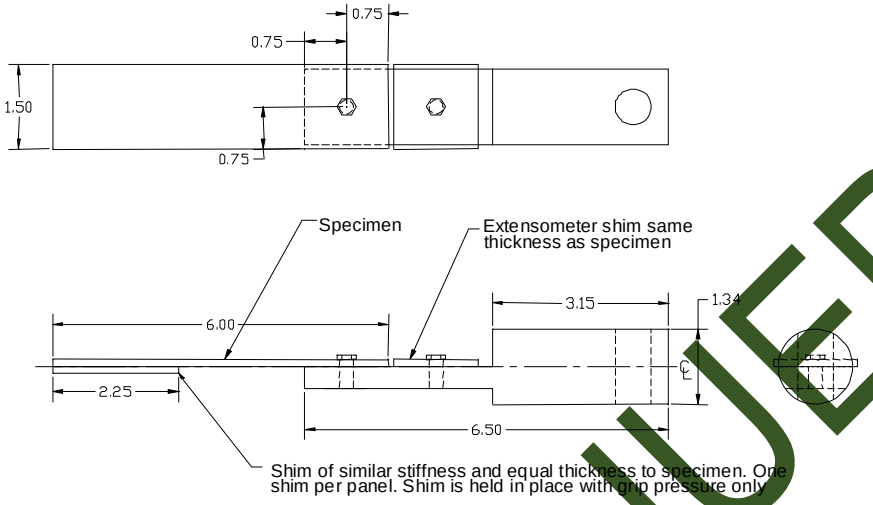


Figure 1-4: Modified ASTM D5961 (Single Shear Bearing) Specimen and Loading Arrangement

1.5.2 Specimen & Testing Details

1.5.2.1 Tabbing

Tabs were used on LT specimens.

1.5.2.2 Specimen Dimensions & Test Configuration

For filled-hole and bearing tests, the hole diameter was 0.25 in -0.000 +0.003 in. For filled-hole tension tests, the fasteners were installed to 85±5 in-lb. For filled-hole compression and bearing tests, the fasteners were installed to 30±5 in-lb. Fasteners were installed after moisture conditioning.

Unless otherwise specified, a tolerance of ±5°F applied to all temperature conditions specified in this document.

For filled-hole and bearing tests, the hole diameter was 0.25 in -0.000 +0.003 in. The following fasteners were used:

1) NASM 21297-04003 bolts with MS 21084 nuts and MS 21206 washers for FHT and FHC
2) NASM 21297-04013 bolts with MS 21084 nuts and MS 21206 washers for SSB

1.5.3 Test Matrix

The tables below show the lay-ups and test matrices used for lamina and laminate level testing.

Layup	Test Type and Direction	Property	Number of Batches x No. of Panels x No. of Specimens			
			Test Temperature/Moisture Condition			
			CTD	RTD	ETD	ETW
$[0]_8$	ASTM D3039 0° Tension	Strength, Modulus and Poisson's Ratio	3x2x3	3x2x3		3x2x3
$[0]_{20}$	ASTM D6641 0° Compression (Note 1)	Modulus	3x2x3	3x2x3	3x2x3	3x2x3
$[90]_{16}$	ASTM D3039 90° Tension	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[90]_{20}$	ASTM D6641 90° Compression (Note 1)	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[0/90]_{3S}$	ASTM D3039 0° Tension (see Note 2)	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[90/0/90]_7$	ASTM D6641 0° Compression (see Note 1 & 2)	Strength and Modulus	3x2x3	3x2x3	3x2x3	3x2x3
$[45/-45]_{4S}$	ASTM D3518 In-Plane Shear	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[0]_{45}$	ASTM D2344 Short Beam	Strength	3x2x3	3x2x3	3x2x3	3x2x3

Table 1-1: Lamina Level Test Matrix

Note 1: Back-to-back strain gages are needed on the first two specimens of each environment. If no buckling is observed, the remaining modulus specimens will require a strain gage on one side of the specimens only. An appropriate extensometer may be used in place of the strain gage.

Note 2: Derive the 0° lamina compressive strength $F^{cu}_{0^\circ\ plies}$ as follows

$$F^{u}_{0^\circ\ plies} = BF\ \frac{P^{f}}{wh}$$

$$BF = \frac{E_1\left[V_0 E_2 + (1-V_0) E_1\right] - \left(\nu_{12} E_2\right)^2}{\left[V_0 E_1 + (1-V_0) E_2\right]\left[V_0 E_2 + (1-V_0) E_1\right] - \left(\nu_{12} E_2\right)^2}$$

Where:

BF = Back-out factor obtained using linear classical lamination theory
P^f = Peak load carried by the test specimen (usually at failure)
w = specimen gage width, mm [in.]
h = specimen gage thickness, mm [in.]

V_0 = fraction of 0° plies in the cross-ply laminate (1/2 for [0/90]ns and 1/3 for [90/0/90]n)
E_1 = axial tensile or compressive stiffness of 0° plies, from an average of all batches
E_2 = transverse tensile or compressive stiffness of 0° plies, from an average of all batches
ν_{12} = major Poisson's ratio of 0° plies, from an average of all batches

Table 1-2 below summarizes the laminate level tests carried out. The layup angles 0º, 45º, -45º, and 90º refer to the orientation of the warp/longitudinal fiber direction. The laminate stacking sequences in this program are not specific to any design. Therefore, careful consideration should be given to the validity of properties derived from this program based on the design specific laminates in a structure to be certified.

Table 1-2 also emphasizes those properties and test condition combinations believed to constitute the worst case, which in general is cold dry for tension and hot wet for compression and other matrix dominated properties.

(%0º/%±45º/%90º) Actual Test Type	Test Type and Layup (5)	Property	Number of Batches x Number of Panels x Number of Test Specimens		
			Test Temperature/Moisture Condition		
			CTD	RTD	ETW
(25/50/25 - QI) UNT1	ASTM D3039 Un-notched Tension [45/0/-45/90]2S	Strength & modulus	3x2x3	3x2x3	3x2x3
(10/80/10) UNT2	ASTM D3039 Un-notched Tension [45/-45/0/45/-45/90/45/-45/45/-45]S	Strength & modulus	3x2x3	3x2x3	3x2x3
(50/40/10) UNT3	ASTM D3039 Un-notched Tension [0/45/0/90/0/-45/0/45/0/-45]S	Strength & modulus	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) UNC1	ASTM D6641 Un-notched Compression (4) [45/0/-45/90]3S	Strength & modulus		3x2x3	3x2x3
(10/80/10) UNC2	ASTM D6641 Un-notched Compression (4) [45/-45/0/45/-45/90/45/-45/45/-45]S	Strength & modulus		3x2x3	3x2x3
(50/40/10) UNC3	ASTM D6641 Un-notched Compression (4) [45/0/90/0/-45/0/45/0/-45/0]S	Strength & modulus		3x2x3	3x2x3
(25/50/25 - QI) SBS1	ASTM D2344 Short Beam (specimens may be taken from panels designed for (25/50/25 - QI) CAI1)	Strength		3x2x3	3x2x3
(25/50/25 - QI) OHT1	ASTM D5766 Open Hole Tension (1) [45/0/-45/90]2S	Strength	3x2x3	3x2x3	3x2x3
(10/80/10) OHT2	ASTM D5766 Open Hole Tension (1) [45/-45/0/45/-45/90/45/-45/45/-45]S	Strength	3x2x3	3x2x3	3x2x3
(50/40/10) OHT3	ASTM D5766 Open Hole Tension (1) [0/45/0/90/0/-45/0/45/0/-45]S	Strength	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) FHT1	ASTM D6742 Filled Hole Tension (2) [45/0/-45/90]2S	Strength	3x2x3	3x2x3	3x2x3
(10/80/10) FHT2	ASTM D6742 Filled Hole Tension (2) [45/-45/0/45/-45/90/45/-45/45/-45]S	Strength	3x2x3	3x2x3	3x2x3
(50/40/10) FHT3	ASTM D6742 Filled Hole Tension (2) [0/45/0/90/0/-45/0/45/0/-45]S	Strength	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) OHC1	ASTM D6484 Open Hole Compression (1)(4) [45/0/-45/90]4S	Strength		3x2x3	3x2x3
(10/80/10) OHC2	ASTM D6484 Open Hole Compression (1)(4) [45/-45/0/45/-45/90/45/-45/45/-45]2S	Strength		3x2x3	3x2x3
(50/40/10) OHC3	ASTM D6484 Open Hole Compression (1)(4) [0/45/0/90/0/-45/0/45/0/-45]2S	Strength		3x2x3	3x2x3
(25/50/25 - QI) FHC1	ASTM D6484 Filled Hole Compression (2) [45/0/-45/90]4S	Strength		3x2x3	3x2x3
(10/80/10) FHC2	ASTM D6484 Filled Hole Compression (2) [45/-45/0/45/-45/90/45/-45/45/-45]2S	Strength		3x2x3	3x2x3
(50/40/10) FHC3	ASTM D6484 Filled Hole Compression (2) [0/45/0/90/0/-45/0/45/0/-45]2S	Strength		3x2x3	3x2x3
(25/50/25 - QI) SSB1	ASTM D5961 Single Shear Bearing (3) (6) [45/0/-45/90]2S	Strength & Deformation		3x2x3	3x2x3
(10/80/10) SSB2	ASTM D5961 Single Shear Bearing (3) (6) [45/-45/0/45/-45/90/45/-45/45/-45]S	Strength & Deformation		3x2x3	3x2x3
(50/40/10) SSB3	ASTM D5961 Single Shear Bearing (3) (6) [0/45/0/90/0/-45/0/45/0/-45]S	Strength & Deformation		3x2x3	3x2x3
(100/0/0) ILT	ASTM D6415 Interlaminar Tension [0]30	Strength	1x1x6	1x1x6	1x1x6
(25/50/25 - QI) CAI1	ASTM D7136 & D7137 Compression After Impact (1500 in.lb/in) (4) [45/0/-45/90]4S	Strength		1x1x6	

Table 1-2: Laminate Level Test Matrix

Note 1: Open-hole configuration: 0.25” hole diameter, 1.5 inch width.
Note 2: Filled-hole test configuration: 0.25” diameter, see section 1.5.2.2 for fastener callout, 1.5” width.
Note 3: Single shear bearing test configuration: 0.25: hole diameter, 1.5” width, see section 1.5.2.2 for fastener callout, e/D=3
Note 4: Back-to-back strain gages needed on the first two specimens of each environment. If no buckling is observed, the remaining modulus specimens will require strain gage on one side of the specimens only. Appropriate extensometer may be used in place of the strain gage.
Note 5: Loading direction is generally along the 0-degree direction
Note 6: Use modified ASTM D5961 per Figure 1-4

(Note that the layup numbers 1, 2 and 3 correspond to those designated as “quasi isotropic,” “soft” and “hard” respectively. In addition, the 0°/90° cross-plied laminates used for the unidirectional materials only are designated “Layup 0”).

1.5.4 Cured Laminate Physical Testing

The properties in Table 1-3 were determined for each panel used for test coupons with the exception of Tg by DMA which were conducted on one laminate per batch from each oven cure conducted where that batch is present. The tests were performed by the National Institute for Aviation Research (NIAR) Composites Laboratory under the supervision of NCAMP.

Property	**Condition/Method** (Note 1)	**Min Replicates per panel**
Cured Ply Thickness	ASTM D3171-06	All data from mechanical test specimens
Laminate Density	ASTM D792-00	3
Fiber Volume, % by Volume	ASTM D3171-06(Note 2)	3
Resin Content, % by Weight	ASTM D3171-06(Note 2)	3
Ultrasonic Through Transmission, C-Scan	MIL-HDBK-787A (Note 3)	1
Glass Transition Temperature, Tg by DMA	Dry and Wet – SACMA SRM 18R-94	1 Dry, 1 Wet (Note 4)

Table 1-3: Physical Testing Matrix

Note 1: Where the applicable standard allows variations in specimen form or test method, the specific parameters to be used will be specified in the test work instructions and reported in the final test report.
Note 2: Method II, except for laminates of materials where actual fiber weight is not accurately known prior to impregnation, as in the case for unidirectional materials. For these materials, in order to verify Method II is accurate, a minimum of 12 samples per batch shall be tested by Method I, Procedure B.
Note 3: Five MHz is preferred for solid laminates. Panels with anomaly should be segregated. Microscopy images may be taken from questionable areas. NCAMP must be involved in the review of all C-scans.
Note 4: Minimum total of 24 dry and 24 wet for each material system.

1.5.5 Environmental Conditioning

The following tests were performed by the NIAR Composites Laboratory under the supervision of NCAMP.

CTD = -65±5°F, dry
RTD = 70±10°F, room temperature dry
ETD = 350±5°F, dry
ETW = 350±5°F, wet (equilibrium moisture content)

Elevated temperature level of 350±5°F may be reduced if wet glass transition temperature is not 400°F or higher. The elevated temperature level may be adjusted to approximately 50°F below the measured wet glass transition temperature.

Within each test method and test environment, the failure mode was evaluated immediately after each test by an FAA DER. All tested specimens were digitally photographed after each test in order to pictorially document failure modes. Representative photos are included in the CD accompanying this report.

For dry testing, specimens were dried at 160°F±5°F for 120 to 130 hours. After drying, specimens were kept in a desiccator until mechanical testing. Alternatively, the specimens may have been left ambient laboratory condition for a maximum of 14 days until mechanical testing (no drying was required if specimens were tested within 14 days from the date they were cured). Ambient laboratory condition is defined as 70°F±10°F. Since moisture absorption and desorption rate for BMI is very slow at ambient temperature, there was no requirement to maintain relative humidity levels.

For wet conditioning, specimens were dried at 160°F±5°F for 120 to 130 hours before being conditioned to equilibrium at 160°F±5°F and 85% ± 5%. Effective moisture equilibrium is achieved when the average moisture content of the traveler specimen changes by less than 0.02% for two consecutive determinations which are 7 ±0.5 days apart and may be expressed by:

$$\frac{W_i - W_{i-1}}{W_b} < 0.0002$$

Where:

W_i = weight at current time
W_{i-1} = weight at previous time
W_b = baseline weight prior to conditioning

When representative specimens could not be measured to determine the moisture content (due to size, fastener and tab effects), traveler coupons of at least 1” by 1” by specimen thickness and weighing at least 15 grams were used to establish weight gain measurements. If the specimens or traveler coupons pass the criteria for two consecutive readings which are 7 ±0.5 days apart, the specimens were kept in the environmental chamber for up to an additional 60 days. Alternatively, the specimens may have been removed from the environmental chamber and placed in a sealed

plastic bag along with a moist cotton towel for a maximum of 14 days until mechanical testing. Strain-gaged specimens were removed from the controlled environment for a maximum of 2 hours for application of gages in ambient laboratory conditions.

1.5.6 Non-ambient Testing

The chamber was of adequate size so that all test fixtures and load frame grips were contained within the chamber.

For elevated temperature testing, the temperature chamber, test fixture, and grips were preheated to the specified temperature. Each specimen was heated to the required test temperature as verified by a thermocouple in direct contact with and taped to the specimen gage section. The heat-up time of the specimen did not exceed 8 minutes, unless otherwise specified in individual test summary sheets. The test was started 5^{+1}_{-0} minutes after the specimen reached the test temperature. During the test, the temperature, as measured on the specimen, was within ±5°F of the required test temperature.

For subzero temperature testing, each specimen was cooled to the required test temperature as verified by a thermocouple in direct contact with and taped to the specimen gage section. The test started 5^{+1}_{-0} minutes after the specimen reached the test temperature. During the test, the temperature, as measured on the specimen, was within ±5°F of the required test temperature.

For wet specimens, the moisture loss was determined by subjecting representative specimens to the same amount of time required to heat-up and fail the specimens. For filled-hole or bearing specimens, fasteners were removed prior to conducting moisture loss measurements. For tabbed specimens, representative coupons without tabs and having the same number of plies were used to conduct the moisture loss measurements. A minimum of one specimen or representative coupon was used to measure the moisture loss for every combination of test temperature and stacking sequence.

1.5.7 Fluid Sensitivity Screening

Table 1-4 lists the requirements for fluid sensitivity screening, which requires ASTM D2344 Short Beam Strength testing on $[0°]_{45}$ lamina level specimens dried at 160°F±5°F for 120 to 130 hours before being subjected to the conditions indicated, five replicates per fluid and one cure cycle. Specimens were cleaned with a dry towel prior to the tests. In addition to short beam strength, load versus displacement curves were plotted to aid in the identification of matrix/resin softening. Since load versus displacement curves are influenced by test machine and fixture compliance, all the tests were performed with the identical machine and fixture, through a single setup. Experience suggests that for the vast majority of BMI resins, water is the fluid with the most deleterious effect on properties. Should screening tests for fluid sensitivity indicate this to be the case, further testing of this type might be unnecessary since exposure to water moisture to equilibrium level is an inherent part of the multi batch allowables test program. However, users must evaluate the applicability of the exposure conditions and time on case-by-case basis. For example, the exposure condition for jet fuel may not fully represent the condition of integral fuel tanks.

Extended Contact:	Exposure	Test Condition	Code
100 Low Lead Aviation Fuel (ASTM D910)	90 days min. @ 70°F±10°F	70°F	FS11RT
	90 days min. @ 70°F±10°F	350°F*	FS11ET
SAE AMS 2629 Jet Reference Fluid	90 days min. @ 70°F±10°F	70°F	FS12RT
	90 days min. @ 70°F±10°F	350°F*	FS12ET
MIL-PRF-5606 Hydraulic Oil	90 days min. @ 70°F±10°F	70°F	FS13RT
	90 days min. @ 70°F±10°F	350°F*	FS13ET
MIL-PRF-83282 Hydraulic Oil	90 days min. @ 70°F±10°F	70°F	FS14RT
	90 days min. @ 70°F±10°F	350°F*	FS14ET
MIL-PRF-7808 Engine Oil	90 days min. @ 70°F±10°F	70°F	FS15RT
	90 days min. @ 70°F±10°F	350°F*	FS15ET
MIL-PRF-23699, Class STD Engine Oil	90 days min. @ 70°F±10°F	70°F	FS16RT
	90 days min. @ 70°F±10°F	350°F*	FS16ET
Sea Water (ASTM D1141 or equiv.)	90 days min. @ 70°F±10°F	70°F	FS17RT
	90 days min. @ 70°F±10°F	350°F*	FS17ET
Skydrol LD-4 (SAE AS1241, Type IV, Class 1)	90 days min. @ 70°F±10°F	70°F	FS18RT
	90 days min. @ 70°F±10°F	350°F*	FS18ET
50% Water with 50% Skydrol LD-4 (SAE AS1241, Type IV, Class 1)	90 days min. @ 70°F±10°F	70°F	FS19RT
	90 days min. @ 70°F±10°F	350°F*	FS19ET
Short Duration Contact:			
MEK washing fluid. ASTM D740	90 minutes min. @ 70°F±10°F	70°F	FS21RT
	90 minutes min. @ 70°F±10°F	350°F*	FS21ET
Polypropylene Glycol Deicer (Type I) Mil-A-824 3	90 minutes min. @ 70°F±10°F	70°F	FS22RT
	90 minutes min. @ 70°F±10°F	350°F*	FS22ET
Isopropyl Alcohol Deicing Agent (TT-I-735)	48±4 hours @70°F±10°F	70°F	FS23RT
	48±4 hours @70°F±10°F	350°F*	FS23ET
Control Tests:			
Distilled Water	90 days min. at 70°F±10°F	70°F	FS31RT
	90 days min. at 70°F±10°F	350°F*	FS31ET
Dry	Dry per section 6.1	70°F	FS32RT
	Dry per section 6.1	350°F*	FS32ET
85% Relative Humidity	Per section 6.1	70°F	FS33RT
	Per section 6.1	350°F*	FS33ET

* Elevated temperature level of 350±5°F may be reduced if wet glass transition temperature is not 400°F or higher. The elevated temperature level may be adjusted to approximately 50°F below the measured wet glass transition temperature.

Table 1-4: Fluid Sensitivity Matrix

1.5.8 Normalization Procedures

Most lamina level tension and compression strength and modulus properties, and all laminate level properties were normalized according to nominal cured ply thickness. Lamina level properties that were not normalized include 90º tensile strength and modulus (unidirectional only), 90º compressive strength and modulus (unidirectional only), in-plane shear strength and modulus, Poisson's ratio, SBS, and ILT. After normalizing, data scatter reduced or remained the same. If data scatter increased significantly after normalizing, the reason was investigated. Wherever properties are normalized, both measured and normalized data were reported.

For unidirectional materials the fiber areal weight cannot be measured in advance of impregnation, hence Method I of ASTM D3171, utilizing acid digestion, will be used to verify the CPT method in accordance with note (2) of Table 1-3.

Method I Fiber Volume (%vol) is 59.540 and Method 2 Fiber Volume (%vol) is 58.777. By comparing Fiber Volume values obtained from Method I and Method II, the values are deemed close enough therefore the FAW is close to the nominal of ~143 gsm. Based on the FAW data from Cytec (Avg ~143 gsm) and our Method I Phys test data (Avg. void content ~ 0%) it is appropriate to use the CPT Method for normalization.

The average cured ply thickness of 0.0055 inch has been used as the nominal cured ply thickness (CPT) for normalization purpose. The following normalization formula was used:
Normalized Value = Measured Value x Measured CPT / Nominal CPT.

1.5.9 Conformity

The 3-batch qualification panels have been fabricated according to the requirements of the test plan and conformed by the FAA. The test specimens and test setups have also been conformed by the FAA.

Testing was witnessed by the FAA. Witnessing was delegated to a DER. Mechanical testing was carried out at the National Institute for Aviation Research, Wichita State University. The test setup and procedures were reviewed by NCAMP IAB and NCAMP staff during a facility audit. FAA conformity inspection records and approvals are included in the CD accompanying this report.

1.5.10 Material Pedigree Information

The PMC Data Collection Template includes the material pedigree information required, such as material and batch information, as well as panel fabrication record, environmental conditioning, test equipment, and test procedures. This template in Microsoft Excel file format is included on the CD provided with this report.

2. Test Results

2.1 Lamina Level Test Summary

Prepreg Material:	Cytec Cycom ® 5250-5 T650 Unitape						**Cytec Cycom ® 5250-5 T650 Unitape Lamina Properties Summary**	
Material Specification:	NMS 226/1							
Fiber:	12K T650 Unitape		**Resin:**	Cycom ® 5250-5				
Tg(dry) (1)	489.14°F and 516.47°F		**Tg(wet) (2)**	383.30°F	**Tg METHOD**	DMA (SRM 18-94)		
PROCESSING:	NCAMP Process Specification 81226 "C" Cure Cycle							
	BATCH 1	BATCH 2	BATCH 3					
Date of fiber manufacture	05/21/2007	09/20/2006	03/08/2006	**Date of testing** 8/19/09 to 10/28/10				
Date of resin manufacture	11/26/2007	08/29/2007	10/16/2007	**Date of data submittal** November 2010				
Date of prepreg manufacture	11/26/2007	08/29/2007	10/16/2007					
Date of composite manufacture	3/28/2008							

LAMINA MECHANICAL PROPERTY SUMMARY
Data reported as: Normalized & Measured
(Normalized by CPT= 0.0055 inch)

	CTD Mean		RTD Mean		ETD Mean		ETW Mean	
	Normalized	Measured	Normalized	Measured	Normalized	Measured	Normalized	Measured
F_1^{tu} (ksi)								
from LT	311.53	314.46	314.34	317.21	---	---	314.48	317.18
from UNT0*	275.82	281.33	295.97	301.53	---	---	304.66	310.96
E_1^t (Msi)								
of LT	20.30	20.49	20.30	20.48	---	---	20.72	20.90
E (Msi)								
of UNT0	10.51	10.72	10.68	10.88	---	---	10.89	11.11
ν_{12}^t	---	0.308	---	0.304	---	---	---	0.388
F_2^{tu} (ksi)	---	10.53	---	11.00	---	---	---	2.91
E_2^t (Msi) of TT	---	1.44	---	1.35	---	---	---	0.59
F_1^{cu} (ksi)								
from UNC0*	221.42	224.01	245.47	249.41	206.14	207.23	152.80	153.64
E_1^c (Msi)								
of LC	17.97	18.10	18.26	18.48	18.16	18.26	18.49	18.68
E (Msi)								
of UNC0	6.87	6.94	6.95	7.05	6.85	6.90	6.51	6.57
F_2^{cu} (ksi)								
of TC	---	48.89	---	39.21	---	---	---	17.54
E_2^c (Msi)								
of TC	---	1.54	---	1.41	---	---	---	0.85
F_{12}^{max} (ksi)		16.15						
F_{12}^{s} 5% Strain (ksi)	---	---	---	---	---	---	---	4.05
$F_{12}^{s0.2\%}$ (ksi)	---	11.14	---	8.61	---	---	---	2.03
G_{12}^{s} (Msi)	---	0.83	---	0.72	---	---	---	0.20
SBS (ksi)	---	18.31	---	15.82	---	8.23	---	5.73

*** Derived from cross-ply using back-out factor**

Table 2-1: Lamina Summary Data

2.2 Laminate Level Test Summary

Prepreg Material:	Cytec Cycom ® 5250-5 T650 Unitape			**Cytec Cycom ® 5250-5 T650 Unitape Laminate Properties Summary**	
Material Specification	NMS 226/1				
Fiber:	12K T650 Unitape	**Resin:**	Cycom ® 5250-5		
Tg(dry) (1)	489.14°F and 516.47°F	**Tg(wet) (2)**	383.30°F	**Tg METHOD**	DMA (SRM 18-94)
PROCESSING:	NCAMP Process Specification 81226 "C" Cure Cycle				

	BATCH 1	BATCH 2	BATCH 3		
Date of fiber manufacture	05/21/2007	09/20/2006	03/08/2006	**Date of testing**	8/19/09 to 10/28/10
Date of resin manufacture	11/26/2007	08/29/2007	10/16/2007	**Date of data submittal**	November 2010
Date of prepreg manufacture	11/26/2007	08/29/2007	10/16/2007		
Date of composite manufacture	3/28/2008				

LAMINATE MECHANICAL PROPERTY SUMMARY
Data reported as: Normalized & Measured
(Normalized by CPT= .0055 inch)

	Layup:	25/50/25		10/80/10		50/40/10	
	Test Condition	Normalized	Measured	Normalized	Measured	Normalized	Measured
OHT Strength (ksi)	**CTD**	53.46	53.88	45.12	45.49	77.39	77.80
	RTD	55.79	56.02	43.59	43.95	81.83	82.34
	ETW	56.30	56.53	34.30	34.27	91.01	91.83
OHC Strength (ksi)	**RTD**	49.84	50.31	43.86	44.19	64.89	65.75
	ETW	36.04	36.50	25.57	25.80	46.16	46.81
UNT Strength (ksi)	**CTD**	97.36	97.69	69.63	70.26	162.57	163.60
	RTD	100.45	101.31	66.41	67.81	169.15	170.77
	ETW	96.92	97.96	48.76	49.09	169.70	171.43
Modulus (msi)	**CTD**	7.52	7.55	5.01	5.05	11.89	11.96
	RTD	7.50	7.57	4.85	4.95	11.85	11.96
	ETW	7.21	7.28	3.80	3.82	11.46	11.58
UNC Strength (ksi)	**RTD**	93.98	95.48	71.89	74.06	134.87	136.47
	ETW	56.10	56.61	33.83	34.32	67.36	67.76
Modulus (msi)	**RTD**	7.05	7.16	4.66	4.80	10.85	10.99
	ETW	6.39	6.46	3.55	3.60	10.34	10.47
FHT Strength (ksi)	**CTD**	62.25	62.72	52.01	52.61	82.66	83.57
	RTD	62.51	63.13	49.18	49.48	88.31	88.86
	ETW	59.79	59.80	35.74	35.97	85.77	85.97
FHC Strength (ksi)	**RTD**	77.29	78.55	58.68	59.27	87.16	88.06
	ETW	51.12	52.07	34.74	35.08	61.27	61.65
LSBS Strength (ksi)	**RTD**	---	11.84	---	---	---	---
	ETW	---	5.74	---	---	---	---
SSB Ultimate Strength	**RTD**	147.65	149.42	153.33	155.91	143.52	145.60
	ETW	101.20	103.29	100.43	102.25	97.94	100.11
2% offset Strength Strength (ksi)	**RTD**	119.70	121.17	114.09	116.01	116.79	118.45
	ETW	81.71	83.38	79.40	80.93	77.54	79.29
ILT Strength (ksi)	**CTD**	---	16.00	---	---	---	---
	RTW	---	16.11	---	---	---	---
	ETW	---	3.56	---	---	---	---
CAI Strength (ksi)	**RTD**	21.10	20.74	---	---	---	---

Table 2-2: Laminate Summary Data

Note (1): See Section 8 for clarification on having two values for dry Tg

Note (2): Users of ETW condition data are cautioned of the fact that ETW test temperature of 350°F is not 50°F (28°C) or more below the wet glass transition temperature as is recommended. They are advised to refer to MIL-HDBK-17-1 Rev G section 2.2.8 and DOT/FAA/AR-01/40 for more information about establishing MOL.

2.3 Individual Test Summaries

2.3.1 Longitudinal Tension Properties (LT)

Material:	Cytec 5250-5 Uni					**Tension, 1-axis**		
						Gr/ Ep		
Resin content:	31.89 % wt	**Comp. densit**	1.58 [g/cc]			**Cytec 5250-5 Uni**		
Fiber volume:	59.91 % vol					**[0]8**		
Ply count:	8							
Test method:	ASTM D3039-00	**Modulus calculation:**	1000 to 3000 microstrain					
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNAJX X1XB		CNAJX X1XA		CNAJX X1XJ	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
F_1^{tu} (ksi)	**Mean**		311.53	314.46	314.34	317.21	314.48	317.18
	Minimum		286.48	291.11	295.60	299.23	270.92	276.47
	Maximum		342.17	343.87	336.79	332.56	333.77	333.90
	C.V.(%)		4.43	4.40	3.52	2.97	4.12	3.82
	No. Specimens		21		21		18	
	No. Prepreg Lots		3		3		3	
E_1^t (Msi)	**Mean**		20.30	20.49	20.30	20.48	20.72	20.90
	Minimum		18.90	18.96	19.35	20.09	19.66	19.74
	Maximum		21.20	21.26	21.20	20.96	23.21	23.68
	C.V.(%)		2.77	2.75	1.93	1.21	4.32	4.59
	No. Specimens		21		21		19	
	No. Prepreg Lots		3		3		3	
ν_{12}	**Mean**		0.308		0.304		0.388	
	No. Specimens		21		21		13	
	No. Prepreg Lots		3		3		3	

2.3.2 Transverse Tension Properties (TT)

Material:	Cytec 5250-5 Uni		**Tension, 2-axis** **Gr/ Ep** **Cytec 5250-5 Uni** **[90]16**
Resin content:	32.06 % wt	**Comp. density:** 1.57 [g/cc]	
Fiber volume:	59.62 % vol		
Ply count:	16		
Test method:	ASTM D3039-00	**Modulus calculation:** 1000 to 3000 microstrain	
Normalized by:	NA		

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		CNAUX X1XB		CNAUX X1XA		CNAUX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
F_2^{tu} (ksi)	**Mean**		10.53		11.00		2.91
	Minimum		9.20		9.14		2.12
	Maximum		12.48		12.29		4.07
	C.V.(%)		8.23		8.22		16.61
	No. Specimens	18		19		23	
	No. Prepreg Lots	3		3		3	
E_2^t (Msi)	**Mean**		1.44		1.35		0.59
	Minimum		1.40		1.32		0.51
	Maximum		1.47		1.39		0.73
	C.V.(%)		1.58		1.54		8.19
	No. Specimens	21		20		23	
	No. Prepreg Lots	3		3		3	

2.3.3 Longitudinal Compression Properties (LC)

Material:	Cytec 5250-5 Uni											**Compression, 1-axis**	
												Gr/ Ep	
Resin content:	33.72 % wt			**Comp. density:** 1.57 [g/cc]								**Cytec 5250-5 Uni**	
Fiber volume:	58.04 % vol											**[0]20**	
Ply count:	20												
Test method:	ASTM D6641-01e1			**Modulus calculation:** 1000 to 3000 microstrain									
Normalized by:	0.0055	in. CPT											
		CTD		**RTD**		**ETD**		**ETW**					
Test Temperature [°F]		-65		70		350		350					
Moisture Conditioning		dry		dry		dry		equilibrium					
Equilibrium at T, RH								160 F,85%					
Source code		CNALX X1XB		CNALX X1XA		CNALX X1XK		CNALX X1X7					
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**				
E_1^c (Msi)	**Mean**	17.97	18.10	18.26	18.48	18.16	18.26	18.49	18.68				
	Minimum	15.12	15.40	17.65	17.87	17.53	17.65	17.69	17.74				
	Maximum	19.70	20.21	18.74	19.35	18.89	18.77	19.48	20.13				
	C.V.(%)	5.07	4.89	1.48	2.19	2.30	2.14	2.79	3.46				
	No. Specimens	21		21		21		21					
	No. Prepreg Lots	3		3		3		3					

2.3.4 Transverse Compression Properties (TC)

Material:	Cytec 5250-5 Uni		**Compression, 2-axis** **Gr/ Ep** **Cytec 5250-5 Uni** **[90]20**
Resin content:	33.93 % w t	**Comp. density:** 1.57 [g.cc]	
Fiber volume:	57.76 % vol		
Ply count:	20		
Test method:	ASTM D6641-01e1	**Modulus calculation:** 1000 to 3000 microstrain	
Normalized by:	NA		

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		CNAZX X1XB		CNAZX X1XA		CNAZX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
F_{2c}^{u} (ksi)	**Mean**		48.89		39.21		17.54
	Minimum		44.44		35.36		16.22
	Maximum		52.59		41.24		19.51
	C.V.(%)		4.33		3.61		4.34
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	
E_{2c} (Msi)	**Mean**		1.54		1.41		0.85
	Minimum		1.46		1.28		0.74
	Maximum		1.69		1.54		1.03
	C.V.(%)		3.37		4.02		8.48
	No. Specimens	21		23		20	
	No. Prepreg Lots	3		3		3	

2.3.5 In-Plane Shear Properties (IPS)

Material:	Cytec 5250-5 Uni		**In-Plane Shear** **Gr/ Ep** **Cytec 5250-5 Uni** **[45/-45]4S**
Resin content:	32.51 % w t	**Comp. density:** 1.57 [g/cc]	
Fiber volume:	58.97 % vol		
Ply count:	16		
Test method:	ASTM D3518-94	**Modulus calculation:** 2000 to 6000 microstrain	
Normalized by:	N/A		

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F, 85%	
Source code		CNANX X1XB		CNANX X1XA		CNANX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
$F_{12}^{s\ max}$ (ksi)	**Mean**		16.15				
	Minimum		15.54				
	Maximum		16.84				
	C.V.(%)		2.16				
	No. Specimens		21				
	No. Prepreg Lots		3				
$F_{12}^{s5\%\ strain}$ (ksi)	**Mean**						4.05
	Minimum						3.78
	Maximum						4.52
	C.V.(%)						5.84
	No. Specimens						18
	No. Prepreg Lots						3
$F_{12}^{s0.2\%}$ (ksi)	**Mean**		11.14		8.61		2.03
	Minimum		10.90		8.40		1.84
	Maximum		11.30		9.02		2.35
	C.V.(%)		1.18		1.87		7.26
	No. Specimens		21		24		20
	No. Prepreg Lots		3		3		3
G_{12}^{s} (Msi)	**Mean**		0.83		0.72		0.20
	Minimum		0.80		0.70		0.18
	Maximum		0.85		0.75		0.24
	C.V.(%)		1.78		1.49		8.19
	No. Specimens		21		24		20
	No. Prepreg Lots		3		3		3

2.3.6 "50/0/50" Unnotched Tension 0 Properties (UNT0)

Material:	Cytec 5250-5 Uni					**Unnotched Tension 0**		
						Gr/ Ep		
Resin content:	32.21 % w t		**Comp. density:**	1.57 [g/cc]		**Cytec 5250-5 Uni**		
Fiber volume:	59.41 % vol					**[0/90]3S**		
Ply count:	12							
Test method:	ASTM D3039-00		**Modulus calculation:**	1000 to 3000 microstrain				
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNAPX X1XB		CNAPX X1XA		CNAPX X1XC	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		147.56	150.41	157.71	160.58	156.67	159.86
	Minimum		137.08	138.12	142.63	145.31	142.55	147.04
	Maximum		157.99	162.68	172.15	172.68	169.15	172.64
UNT0	**C.V.(%)**		3.73	3.95	4.54	4.69	4.47	4.20
Strength (ksi)								
	No. Specimens			21		21		21
	No. Prepreg Lots			3		3		3
	Mean		10.51	10.72	10.68	10.88	10.89	11.11
	Minimum		10.05	10.14	10.42	10.38	10.03	10.32
	Maximum		10.84	11.13	11.09	11.48	11.81	12.15
UNT0	**C.V.(%)**		2.03	2.38	1.94	2.59	3.52	3.94
Modulus (Msi)								
	No. Specimens			21		21		21
	No. Prepreg Lots			3		3		3

2.3.7 “25/50/25” Unnotched Tension 1 Properties (UNT1)

Material:	Cytec 5250-5 Uni					**Unnotched Tension 1**		
						Gr/Ep		
Resin content:	33.24 % w t		**Comp. density:** 1.56 [g/cc]			**Cytec 5250-5 Uni**		
Fiber volume:	58.18 % vol					**[45/0/-45/90]2S**		
Ply count:	16							
Test method:	ASTM D3039-00		**Modulus calculation:** 1000 to 3000 microstrain					
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNAAX X1XB		CNAAX X1XA		CNAAX X1XJ	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
UNT1 Strength (ksi)	**Mean**		97.36	97.69	100.45	101.31	96.92	97.96
	Minimum		93.07	93.79	95.89	95.43	91.53	93.01
	Maximum		100.79	104.86	105.12	108.92	101.14	101.93
	C.V.(%)		2.58	3.02	2.29	3.03	2.68	2.52
	No. Specimens		21		21		21	
	No. Prepreg Lots		3		3		3	
UNT1 Modulus (Msi)	**Mean**		7.52	7.55	7.50	7.57	7.21	7.28
	Minimum		7.30	7.28	6.86	6.91	6.79	6.91
	Maximum		7.67	7.80	7.81	7.92	7.64	7.70
	C.V.(%)		1.38	1.85	2.50	2.65	2.75	2.41
	No. Specimens		21		21		21	
	No. Prepreg Lots		3		3		3	

2.3.8 "10/80/10" Unnotched Tension 2 Properties (UNT2)

Material:	Cytec 5250-5 Uni					**Unnotched Tension 2**		
						Gr/Ep		
Resin content:	32.64 % w t		**Comp. density:**	1.57 [g/cc]		**Cytec 5250-5 Uni**		
Fiber volume:	58.99 % vol					**[45/-45/0/45/-45/90/45/-45/45/-45]S**		
Ply count:	20							
Test method:	ASTM D3039-00		**Modulus calculation:**	1000 to 3000 microstrain				
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNABX X1XB		CNABX X1XA		CNABX X1XJ	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		69.63	70.26	66.41	67.91	48.76	49.09
	Minimum		67.03	67.44	64.46	64.55	46.06	46.14
	Maximum		71.75	72.76	70.88	71.56	50.47	51.32
UNT2 Strength (ksi)	**C.V.(%)**		1.83	1.91	2.07	2.62	2.17	2.52
	No. Specimens		21		21		21	
	No. Prepreg Lots		3		3		3	
	Mean		5.01	5.05	4.85	4.85	3.80	3.82
	Minimum		4.87	4.87	4.67	4.71	3.60	3.62
	Maximum		5.18	5.32	5.07	5.19	4.02	4.07
UNT2 Modulus (Msi)	**C.V.(%)**		1.98	2.74	2.03	3.04	3.19	3.76
	No. Specimens		21		21		21	
	No. Prepreg Lots		3		3		3	

2.3.9 “50/40/10” Unnotched Tension 3 Properties (UNT3)

Material:	Cytec 5250-5 Uni					**Unnotched Tension 3**	
Resin content:	32.81 % w t	**Comp. density:**	1.57 [g/cc]			**Gr/Ep**	
Fiber volume:	58.73 % vol					**Cytec 5250-5 Uni**	
Ply count:	20					**[0/45/0/90/0/-45/0/45/0/-45]S**	
Test method:	ASTM D3039-00	**Modulus calculation:**	1000 to 3000 microstrain				
Normalized by:	0.0055	in. CPT					

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F 85%	
Source code		CNACX X1XB		CNACX X1XA		CNACX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
UNT3 Strength (ksi)	**Mean**	162.57	163.60	169.15	170.77	169.70	171.43
	Minimum	154.97	152.98	155.66	158.47	162.30	163.34
	Maximum	176.69	177.44	178.93	183.82	175.42	178.55
	C.V.(%)	4.11	3.95	3.88	4.07	1.95	2.43
	No. Specimens	21		21		22	
	No. Prepreg Lots	3		3		3	
UNT3 Modulus (Msi)	**Mean**	11.89	11.96	11.85	11.96	11.46	11.58
	Minimum	11.36	11.46	11.37	11.64	10.97	11.17
	Maximum	12.74	12.85	12.71	12.71	12.07	12.11
	C.V.(%)	2.99	2.57	2.47	1.98	2.67	2.22
	No. Specimens	21		22		22	
	No. Prepreg Lots	3		3		3	

2.3.10 "33/0/67" Unnotched Compression 0 Properties (UNC0)

Material: Cytec 5250-5 Uni

Unnotched Compression 0
Gr/ Ep
Cytec 5250-5 Uni
[90/0/90]7

Resin content: 33.51 % wt **Comp. density** 1.56 [g/cc]
Fiber volume: 58.00 % vol
Ply count: 21

Test method: ASTM D6641-01e1 **Modulus calculation:** 1000 to 3000 microstrain

Normalized by: 0.0055 in. CPT

		CTD		RTD		ETD		ETW	
Test Temperature [°F]		-65		70		350		350	
Moisture Conditioning		dry		dry		dry		equilibrium	
Equilibrium at T, RH								160 F,85%	
Source code		CNARX X1XB		CNARX X1XA		CNARX X1XK		CNARX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean	86.30	87.22	94.29	95.65	77.75	78.25	55.57	55.83
	Minimum	72.47	72.86	86.82	88.21	73.48	73.44	50.90	50.58
	Maximum	100.25	101.63	100.06	100.73	88.13	88.11	61.01	62.07
UNC0 Strength (ksi)	**C.V.(%)**	9.44	9.61	3.34	3.23	4.82	4.68	4.73	5.24
	No. Specimens	22		21		21		21	
	No. Prepreg Lots	3		3		3		3	
	Mean	6.87	6.94	6.95	7.05	6.85	6.90	6.51	6.57
	Minimum	6.38	6.43	6.63	6.75	6.61	6.60	6.28	6.27
	Maximum	7.32	7.44	7.18	7.28	7.19	7.27	6.76	6.87
UNC0 Modulus (Msi)	**C.V.(%)**	3.81	3.77	2.12	2.14	4.82	2.36	2.09	2.80
	No. Specimens	21		21		21		20	
	No. Prepreg Lots	3		3		3		3	

2.3.11 "25/50/25" Unnotched Compression 1 Properties (UNC1)

Material:	Cytec 5250-5 Uni					**Unnotched Compression 1** Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]3S	
Resin content:	33.60 % wt	**Comp. density:** 1.57 [g/cc]					
Fiber volume:	58.02 % vol						
Ply count:	24						
Test method:	ASTM D6641-01e1	**Modulus calculation:** 1000 to 3000 mircostrain					
Normalized by:	0.0055	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNAWX X1XA		CNAWX X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	93.98	95.48	56.10	56.61		
	Minimum	84.74	86.29	50.81	51.41		
	Maximum	104.07	105.53	66.40	66.53		
UNC1 Strength (ksi)	**C.V.(%)**	5.12	5.27	6.75	6.66		
	No. Specimens	22		25			
	No. Prepreg Lots	3		3			
	Mean	7.05	7.16	6.39	6.46		
	Minimum	6.74	6.85	6.03	6.05		
	Maximum	7.43	7.56	6.62	6.74		
UNC1 Modulus (Msi)	**C.V.(%)**	2.58	2.65	2.49	2.64		
	No. Specimens	23		21			
	No. Prepreg Lots	3		3			

2.3.12 "10/80/10" Unnotched Compression 2 Properties (UNC2)

Material:	Cytec 5250-5 Uni					**Unnotched Compression 2** Gr/ Ep Cytec 5250-5 Uni [45/-45/0/45/-45/90/45/-45/45/-45]S	
Resin content:	33.39 % w t		**Comp. density:** 1.57 [g/cc]				
Fiber volume:	58.31 % vol						
Ply count:	20						
Test method:	ASTM D6641-01e1		**Modulus calculation:** 1000 to 3000 microstrain				
Normalized by:	0.0055	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		350		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			CNAXX X1XA		CNAXX X1XJ		
			Normalized	**Measured**	**Normalized**	**Measured**	
	Mean		71.89	74.06	33.83	34.32	
	Minimum		63.79	64.62	31.32	31.24	
	Maximum		75.89	78.07	37.16	38.18	
UNC2 Strength (ksi)	**C.V.(%)**		3.67	4.02	4.69	5.05	
	No. Specimens		21		22		
	No. Prepreg Lots		3		3		
	Mean		4.66	4.80	3.55	3.60	
	Minimum		4.46	4.62	3.41	3.42	
	Maximum		4.76	4.98	3.84	3.83	
UNC2 Modulus (Msi)	**C.V.(%)**		1.38	1.85	3.19	3.14	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.13 "50/40/10" Unnotched Compression 3 Properties (UNC3)

Material:	Cytec 5250-5 Uni					**Unnotched Compression 3**	
Resin content:	33.65 % w t	**Comp. density:** 1.57 [g/cc]				**Gr/ Ep**	
Fiber volume:	57.98 % vol					**Cytec 5250-5 Uni**	
Ply count:	20					**[45/0/90/0/-45/0/45/0/-45/0]S**	
Test method:	ASTM D6641-01e1	**Modulus calculation:** 1000 to 3000 mircostrain					
Normalized by:	0.0055	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning				equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNAYX X1XA		CNAYX X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	134.87	136.47	67.36	67.76		
	Minimum	125.30	128.78	62.03	62.31		
	Maximum	144.60	146.91	74.48	75.23		
UNC3 Strength (ksi)	**C.V.(%)**	3.36	3.03	6.05	5.84		
	No. Specimens	20		23			
	No. Prepreg Lots	3		3			
	Mean	10.85	10.99	10.34	10.47		
	Minimum	10.35	10.53	9.72	9.86		
	Maximum	11.30	11.31	10.96	11.25		
UNC3 Modulus (Msi)	**C.V.(%)**	2.03	2.19	3.18	3.28		
	No. Specimens	21		20			
	No. Prepreg Lots	3		3			

2.3.14 Lamina Short-Beam Strength Properties (SBS)

Material:	Cytec 5250-5 Uni							**Short Beam Strength** Gr/ Ep Cytec 5250-5 Uni [0]45
Resin content:	33.42 % wt	**Comp. densi**	1.57 [g/cc]					
Fiber volume:	58.24 % vol							
Ply count:	45							
Test method:	ASTM D2344-00							
Normalized by:	NA							
		CTD		**RTD**		**ETD**		**ETW**
Test Temperature [°F]		-65		70		350		350
Moisture Conditioning		dry		dry		dry		equilibrium
Equilibrium at T, RH								160 F,85%
Source code		CNAQX X1XB		CNAQX X1XA		CNAQX X1XK		CNAQX X1XJ
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
SBS Strength (ksi)	**Mean**		18.31		15.82		8.23		5.73
	Minimum		16.78		15.18		8.02		5.27
	Maximum		19.73		16.61		8.83		6.48
	C.V.(%)		3.52		2.45		2.36		4.70
	No. Specimens	25		23		22		22	
	No. Prepreg Lots	3		3		3		3	

2.3.15 Laminate Short-Beam Strength Properties (SBS1)

Material:	Cytec 5250-5 Uni					**Laminate Short Beam Strength** Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]4S	
Resin content:	see OHC1	**Comp. density:**	see OHC1				
Fiber volume:	see OHC1						
Ply count:	32						
Test method:	ASTM D2344-00						
Normalized by:	NA						
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNAqX XGXA		CNAqX XGXJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
LSBS Strength (ksi)	**Mean**		11.84		5.74		
	Minimum		10.55		5.55		
	Maximum		13.49		5.93		
	C.V.(%)		6.13		1.81		
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.16 "25/50/25" Open-Hole Tension 1 Properties (OHT1)

Material:	Cytec 5250-5 Uni					**Open Hole Tension 1**		
						Gr/Ep		
Resin content:	32.31 % wt		**Comp. density:**	1.57 [g/cc]		**Cytec 5250-5 Uni**		
Fiber volume:	59.33 % vol					**[45/0/-45/90]2S**		
Ply count:	16							
Test method:	ASTM D5766-02a							
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNADX X1XB		CNADX X1XA		CNADX X1XJ	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		53.46	53.88	55.79	56.02	56.30	56.53
	Minimum		51.10	50.56	52.69	52.22	52.45	52.62
	Maximum		56.54	57.76	58.52	58.86	59.73	60.36
OHT1	**C.V.(%)**		2.76	3.33	2.73	3.37	3.46	3.42
Strength (ksi)								
	No. Specimens		21		21		21	
	No. Prepreg Lots		3		3		3	

2.3.17 "10/80/10" Open-Hole Tension 2 Properties (OHT2)

Material:	Cytec 5250-5 Uni					**Open Hole Tension 2**		
						Gr/Ep		
Resin content:	32.19 % wt	**Comp. density:**	1.56 [g/cc]			**Cytec 5250-5 Uni**		
Fiber volume:	59.55 % vol					**[45/-45/0/45/-45/90/45/-45/45/-45]S**		
Ply count:	20							
Test method:	ASTM D5766-02a							
Normalized by:	0.0055	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		350		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F, 85%		
Source code		CNAEX X1XB		CNAEX X1XA		CNAEX X1XJ		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
	Mean	45.12	45.49	43.59	43.95	34.30	34.27	
	Minimum	43.60	43.44	41.91	42.63	32.63	31.90	
	Maximum	46.59	46.70	44.67	45.37	35.41	36.48	
OHT2	**C.V.(%)**	1.57	1.89	1.85	1.85	2.19	3.54	
Strength (ksi)								
	No. Specimens	19		19		22		
	No. Prepreg Lots	3		3		3		

2.3.18 "50/40/10" Open-Hole Tension 3 Properties (OHT3)

Material:	Cytec 5250-5 Uni					**Open Hole Tension 3**		
						Gr/Ep		
Resin content:	32.40 % wt	**Comp. density:** 1.57 [g/cc]				**Cytec 5250-5 Uni**		
Fiber volume:	59.37 % vol					**[0/45/0/90/0/-45/0/45/0/-45]S**		
Ply count:	20							
Test method:	ASTM D5766-02a							
Normalized by:	0.0055	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		350		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F,85%		
Source code		CNAFX X1XB		CNAFX X1XA		CNAFX X1XJ		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
	Mean	77.39	77.80	81.83	82.34	91.01	91.83	
	Minimum	70.46	70.96	73.43	74.31	83.85	85.03	
	Maximum	82.34	83.09	85.34	86.35	96.46	97.32	
OHT3	**C.V.(%)**	3.44	3.56	3.69	3.60	3.30	3.24	
Strength (ksi)								
	No. Specimens	19		19		21		
	No. Prepreg Lots	3		3		3		

2.3.19 "25/50/25" Filled-Hole Tension 1 Properties (FHT1)

Material:	Cytec 5250-5 Uni					**Filled Hole Tension 1** Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]2S	
Resin content:	31.73 % w t		**Comp. density:** 1.57 [g/cc]				
Fiber volume:	60.06 % vol						
Ply count:	16						
Test method:	ASTM D6742-02						
Normalized by:	0.0055	in. CPT					
		CTD		**RTD**		**ETW**	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		CNA4X X1XB		CNA4X X1XA		CNA4X X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean	62.25	62.72	62.51	63.13	59.79	59.80
	Minimum	57.69	59.43	59.88	60.73	56.28	56.68
	Maximum	67.88	68.30	66.65	66.98	62.57	62.77
FHT1	**C.V.(%)**	4.65	3.93	2.69	2.59	2.91	2.58
Strength (ksi)							
	No. Specimens	19		19		20	
	No. Prepreg Lots	3		3		3	

2.3.20 "10/80/10" Filled-Hole Tension 2 Properties (FHT2)

Material:	Cytec 5250-5 Uni					**Filled Hole Tension 2**	
Resin content:	32.57 % w t	**Comp. density:**	1.57 [g/cc]			**Gr/ Ep**	
Fiber volume:	59.34 % vol					**Cytec 5250-5 Uni**	
Ply count:	20					**[45/-45/0/45/-45/90/45/-45/45/-45]S**	
Test method:	ASTM D6742-02						
Normalized by:	0.0055	in. CPT					

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F, 85%	
Source code		CNA5X X1XB		CNA5X X1XA		CNA5X X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean	52.01	52.61	49.18	49.48	35.74	35.97
	Minimum	47.59	47.72	45.96	45.96	31.87	32.40
	Maximum	54.60	55.63	52.45	52.81	37.70	38.18
FHT2	**C.V.(%)**	3.66	3.77	3.80	3.53	4.01	4.29
Strength (ksi)							
	No. Specimens	19		19		20	
	No. Prepreg Lots	3		3		3	

2.3.21 "50/40/10" Filled-Hole Tension 3 Properties (FHT3)

Material:	Cytec 5250-5 Uni					**Filled Hole Tension 3**		
						Gr/ Ep		
Resin content:	31.64 % wt		**Comp. density:** 1.57 [g/cc]			**Cytec 5250-5 Uni**		
Fiber volume:	60.18 % vol					**[0/45/0/90/0/-45/0/45/0/-45]S**		
Ply count:	20							
Test method:	ASTM D6742							
Normalized by:	0.0055	in. CPT						
			CTD		**RTD**		**ETW**	
Test Temperature [°F]			-65		70		350	
Moisture Conditioning			dry		dry		equilibrium	
Equilibrium at T, RH							160 F,85%	
Source code			CNA6X X1XB		CNA6X X1XA		CNA6X X1XJ	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		82.66	83.57	88.31	88.86	85.77	85.97
	Minimum		76.47	77.16	80.75	82.91	79.71	79.54
	Maximum		86.81	87.42	93.73	93.86	94.94	95.10
FHT3	**C.V.(%)**		3.20	3.25	3.96	3.38	4.08	4.29
Strength (ksi)								
	No. Specimens		19		20		21	
	No. Prepreg Lots		3		3		3	

2.3.22 "25/50/25" Open-Hole Compression 1 Properties (OHC1)

Material:	Cytec 5250-5 Uni					**Open Hole Compression 1** Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]4S	
Resin content:	32.89 % w t	**Comp. density:**	1.57 [g/cc]				
Fiber volume:	58.76 % vol						
Ply count:	32						
Test method:	ASTM D6484-04						
Normalized by:	0.0055	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNAGX X1XA		CNAGX X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	49.84	50.31	36.04	36.50		
	Minimum	48.35	48.31	34.29	34.02		
	Maximum	52.12	52.21	39.68	39.97		
OHC1	**C.V.(%)**	1.59	1.65	3.68	4.42		
Strength (ksi)							
	No. Specimens	21		23			
	No. Prepreg Lots	3		3			

2.3.23 "10/80/10" Open-Hole Compression 2 Properties (OHC2)

Material:	Cytec 5250-5 Uni			**Open Hole Compression 2**			
Resin content:	32.30 % wt	**Comp. density:**	1.57 [g/cc]	**Gr/Ep**			
Fiber volume:	59.44 % vol			**Cytec 5250-5 Uni**			
Ply count:	40			**[45/-45/0/45/-45/90/45/-45/45/-45]2S**			
Test method:	ASTM D6484-04						
Normalized by:	0.0055	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		350		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			CNAHX X1XA		CNAHX X1XJ		
			Normalized	**Measured**	**Normalized**	**Measured**	
	Mean		43.86	44.19	25.57	25.80	
	Minimum		41.32	42.30	24.27	24.07	
	Maximum		45.49	45.63	26.47	27.23	
OHC2	**C.V.(%)**		2.26	2.30	2.49	3.18	
Strength (ksi)							
	No. Specimens			19		21	
	No. Prepreg Lots			3		3	

2.3.24 "50/40/10" Open-Hole Compression 3 Properties (OHC3)

Material:	Cytec 5250-5 Uni					**Open Hole Compression 3**	
Resin content:	32.09 % w t	**Comp. density:**	1.57 [g/cc]			**Gr/Ep**	
Fiber volume:	59.64 % vol					**Cytec 5250-5 Uni**	
Ply count:	40					**[0/45/0/90/0/-45/0/45/0/-45]2S**	
Test method:	ASTM D6484-04						
Normalized by:	0.0055	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNAIX X1XA		CNAIX X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	64.89	65.75	46.16	46.81		
	Minimum	61.78	62.56	42.02	42.03		
	Maximum	68.30	69.23	49.15	50.48		
OHC3	**C.V.(%)**	2.66	2.72	4.34	5.06		
Strength (ksi)							
	No. Specimens	19		18			
	No. Prepreg Lots	3		3			

2.3.25 "25/50/25" Filled-Hole Compression 1 Properties (FHC1)

Material:	Cytec 5250-5 Uni					**Filled Hole Compression 1 Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]4S**	
Resin content:	31.65 % wt	**Comp. density:**	1.57 [g/cc]				
Fiber volume:	60.26 % vol						
Ply count:	32						
Test method:	ASTM D6742-02						
Normalized by:	0.0055	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA7X X1XA		CNA7X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	77.29	78.55	51.12	52.07		
	Minimum	71.04	70.85	46.65	47.31		
	Maximum	84.40	87.42	53.60	54.97		
FHC1	**C.V.(%)**	4.89	5.21	3.35	3.90		
Strength (ksi)							
	No. Specimens	22		21			
	No. Prepreg Lots	3		3			

2.3.26 "10/80/10" Filled-Hole Compression 2 Properties (FHC2)

Material:	Cytec 5250-5 Uni		
Resin content:	32.38 % w t	**Comp. density:**	1.57 [g/cc]
Fiber volume:	59.44 % vol		
Ply count:	40		
Test method:	ASTM D6742-02		
Normalized by:	0.0055	in. CPT	

Filled Hole Compression 2
Gr/ Ep
Cytec 5250-5 Uni
[45/-45/0/45/-45/90/45/-45/45/-45]2S

		RTD		ETW			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA8X X1XA		CNA8X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	58.68	59.27	34.74	35.08		
	Minimum	56.39	55.42	32.00	31.96		
	Maximum	62.43	62.75	38.21	38.84		
FHC2	**C.V.(%)**	2.42	2.84	3.94	4.26		
Strength (ksi)							
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			

2.3.27 "50/40/10" Filled-Hole Compression 3 Properties (FHC3)

Material:	Cytec 5250-5 Uni		
Resin content:	32.66 % wt	**Comp. density:**	1.57 [g/cc]
Fiber volume:	59.11 % vol		
Ply count:	40		
Test method:	ASTM D6742-02		
Normalized by:	0.0055	in. CPT	

Filled Hole Compression 3
Gr/ Ep
Cytec 5250-5 Uni
[0/45/0/90/0/-45/0/45/0/-45]2S

		RTD		ETW			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA9X X1XA		CNA9X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	87.16	88.06	61.27	61.65		
	Minimum	79.21	81.34	53.96	54.64		
	Maximum	92.72	92.51	67.58	67.15		
FHC3	**C.V.(%)**	3.71	3.24	6.42	5.80		
Strength (ksi)							
	No. Specimens	18		22			
	No. Prepreg Lots	3		3			

2.3.28 "25/50/25" Single-Shear Bearing 1 Properties (SSB1)

Material:	Cytec 5250-5 Uni					**Single Shear Bearing 1** Gr/ Ep Cytec 5250-5 Uni [45/0/-45/90]2S	
Resin content:	31.89 % w t	**Comp. density:** 1.58 [g/cc]					
Fiber volume:	59.91 % vol						
Ply count:	16						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0055	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA1X X1XA		CNA1X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	147.65	149.42	101.20	103.29		
	Minimum	131.59	134.16	93.81	95.17		
	Maximum	162.16	164.27	112.34	117.25		
SSB1 Ultimate Strength	**C.V.(%)**	5.28	4.84	5.31	5.99		
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			
	Mean	119.70	121.17	81.71	83.38		
	Minimum	108.62	110.75	73.92	75.41		
	Maximum	131.65	135.10	94.25	98.75		
SSB1 2% offset Strength	**C.V.(%)**	5.38	5.60	6.20	6.36		
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			

2.3.29 "10/80/10" Single-Shear Bearing 2 Properties (SSB2)

Material:	Cytec 5250-5 Uni					**Single Shear Bearing 2** **Gr/ Ep** **Cytec 5250-5 Uni** **[45/-45/0/45/-45/90/45/-45/45/-45]S**	
Resin content:	33.88 % wt	**Comp. density:** 1.56 [g/cc]					
Fiber volume:	57.62 % vol						
Ply count:	20						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0055	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA2X X1XA		CNA2X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	153.33	155.91	100.43	102.25		
	Minimum	147.65	149.25	95.54	97.57		
	Maximum	161.54	165.36	109.43	112.48		
SSB2	**C.V.(%)**	2.82	2.67	3.74	3.75		
Ultimate Strength							
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			
	Mean	114.09	116.01	79.40	80.93		
	Minimum	107.11	106.99	61.58	61.44		
	Maximum	122.57	126.63	94.89	94.53		
SSB2	**C.V.(%)**	3.91	3.87	10.18	11.07		
2% offset Strength							
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			

2.3.30 "50/40/10" Single-Shear Bearing 3 Properties (SSB3)

Material:	Cytec 5250-5 Uni					**Single Shear Bearing 3** Gr/ Ep Cytec 5250-5 Uni [0/45/0/90/0/-45/0/45/0/-45]S	
Resin content:	32.15 % w t	**Comp. density:** 1.57 [g/cc]					
Fiber volume:	59.52 % vol						
Ply count:	20						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0055	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		350			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		CNA3X X1XA		CNA3X X1XJ			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean	143.52	145.60	97.94	100.11		
	Minimum	129.99	134.33	91.06	92.01		
	Maximum	158.97	161.39	106.97	113.78		
SSB3 Ultimate Strength	**C.V.(%)**	4.67	4.75	5.39	5.83		
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			
	Mean	116.79	118.45	77.54	79.29		
	Minimum	107.42	109.09	64.84	66.34		
	Maximum	127.31	125.36	84.06	89.22		
SSB3	**C.V.(%)**	5.12	4.57	5.77	6.92		
2% offset Strength							
(ksi)	**No. Specimens**	21		21			
	No. Prepreg Lots	3		3			

2.3.31 Compression After Impact 1 Properties (CAI1)

Material:	Cytec 5250-5 Uni					**Compression After Impact**	
						Gr/ Ep	
Resin content:	34.07 % wt	**Comp. density:**	1.56 [g/cc]			**Cytec 5250-5 Uni**	
Fiber volume:	57.85 % vol					**[45/0/-45/90]4S**	
Ply count:	32						
Test method:	ASTM D 7136/D7137-05e1						
Normalized by:	0.0055	in. CPT					
			RTD				
Test Temperature [°F]			70				
Moisture Conditioning			dry				
Equilibrium at T, RH							
Source code			CNAKX X1XA				
		Normalized		**Measured**			
	Mean	21.10		20.74			
	Minimum	19.02		18.97			
	Maximum	23.63		23.03			
CAI	**C.V.(%)**	7.35		6.91			
Strength (ksi)							
	No. Specimens		8				
	No. Prepreg Lots		1				

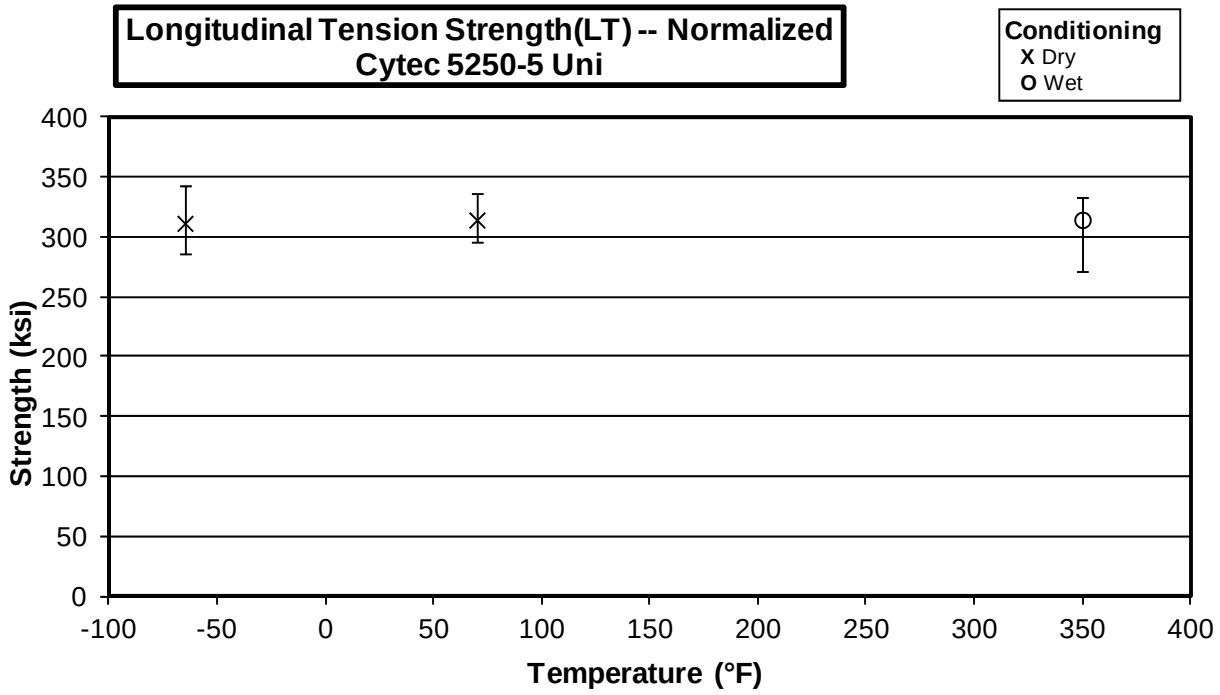
2.3.32 Interlaminar Tension Properties (ILT)

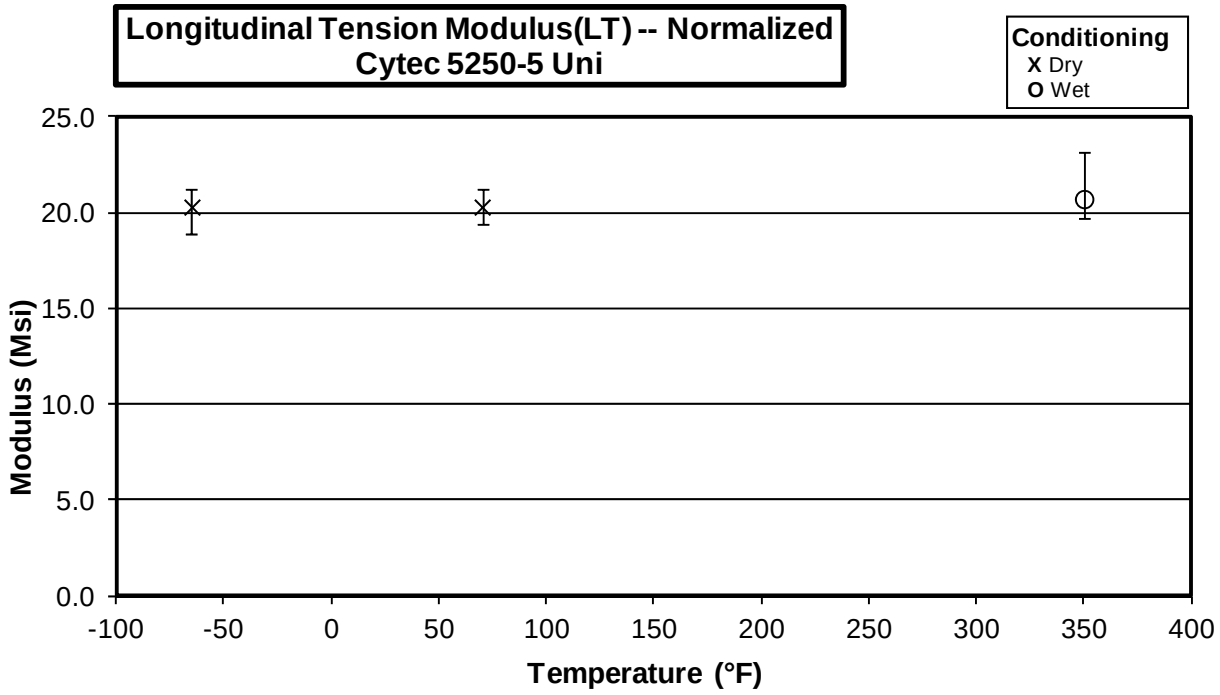
Material:	Cytec 5250-5 Uni					**Interlaminar Tension**	
						Gr/ Ep	
Resin content:	30.62 % wt	**Comp. density:**	1.56 [g/cc]			**Cytec 5250-5 Uni**	
Fiber volume:	60.86 % vol					**[0]30**	
Ply count:	30						
Test method:	ASTM D6415-06ae1						
Normalized by:	NA						
		CTD		**RTD**		**ETW**	
Test Temperature [°F]		-65		70		350	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		CNAMX X1XB		CNAMX X1XA		CNAMX X1XJ	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		16.00		16.11		3.56
	Minimum		12.01		14.67		2.73
	Maximum		18.03		17.95		4.12
ILT	**C.V.(%)**		12.42		7.78		12.71
Strength (ksi)							
	No. Specimens		7		6		6
	No. Prepreg Lots		1		1		1

3. Individual Test Charts

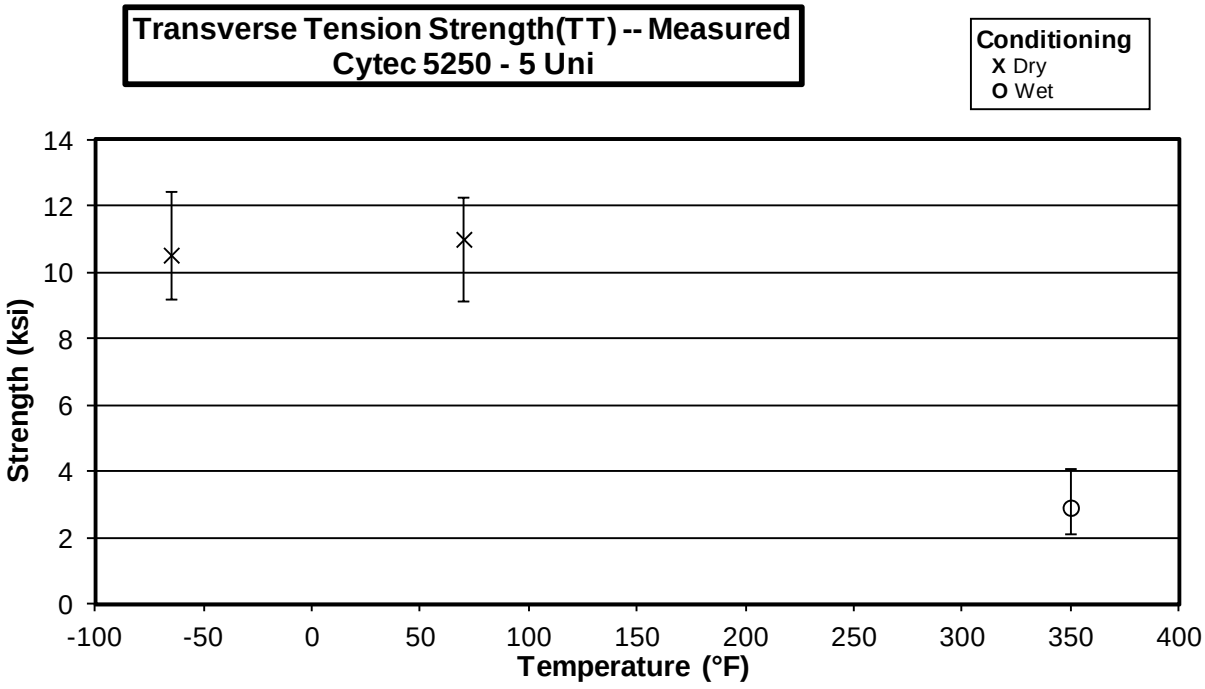
These charts combine all three batches of data and plot the minimum and maximum modulus and strength range based on the test temperature.

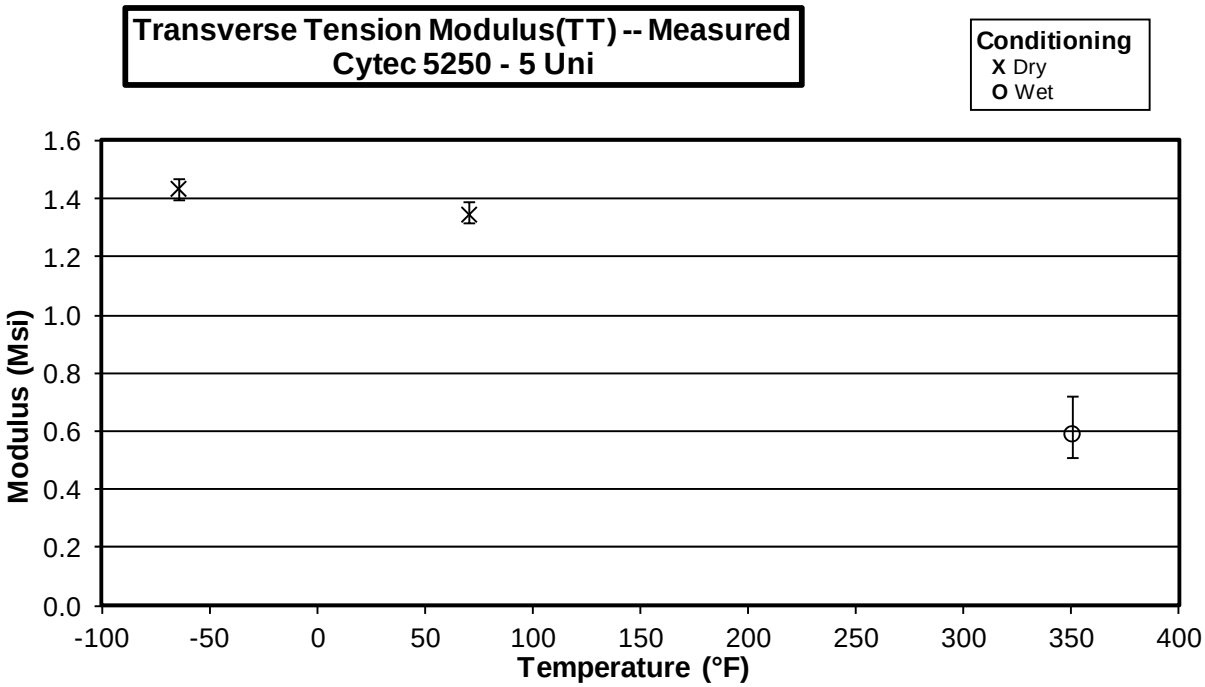
3.1 Longitudinal Tension Properties (LT)



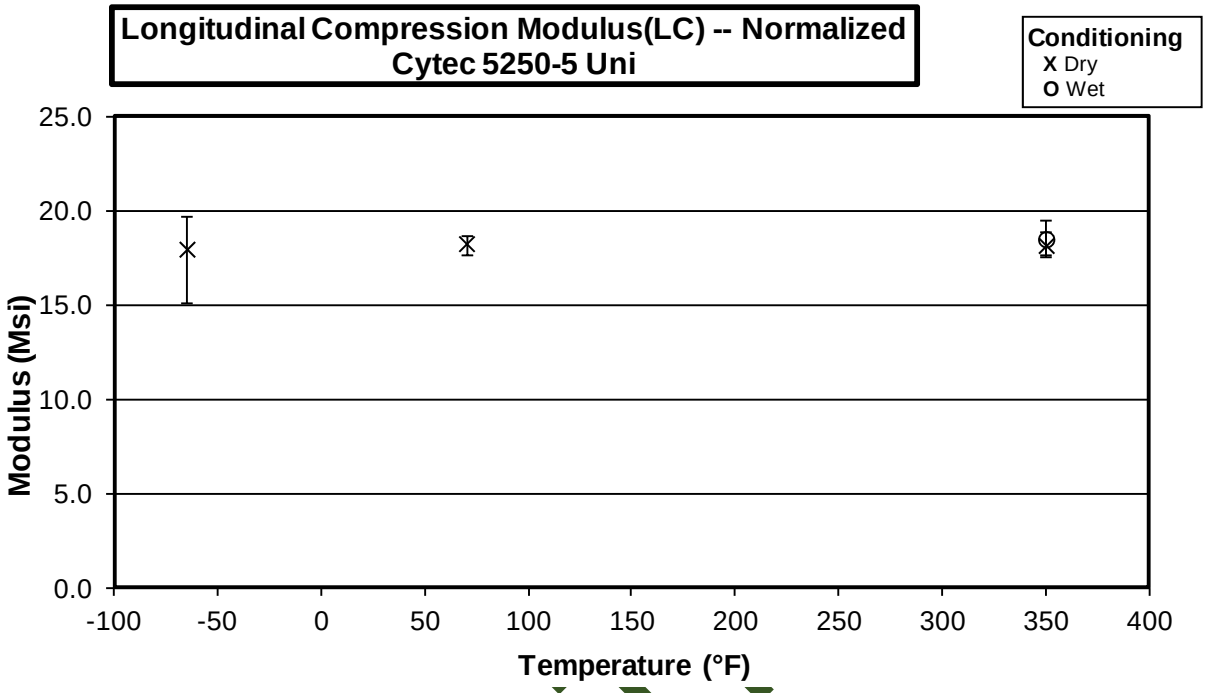


3.2 Transverse Tension Properties (TT)

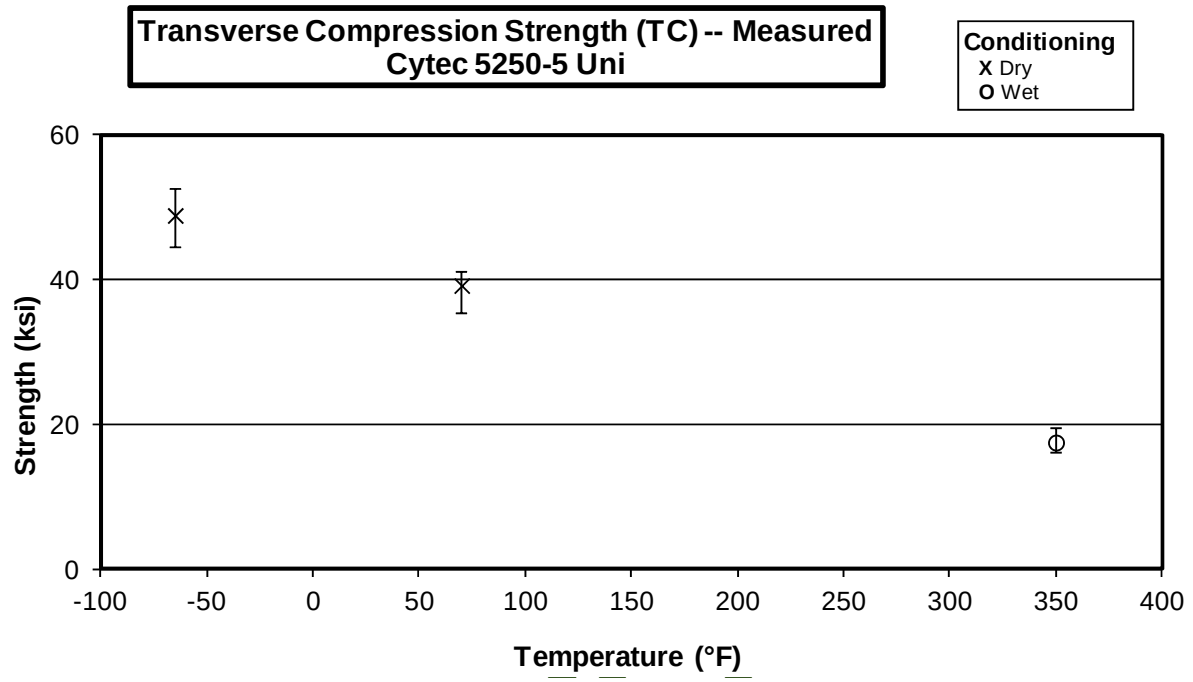


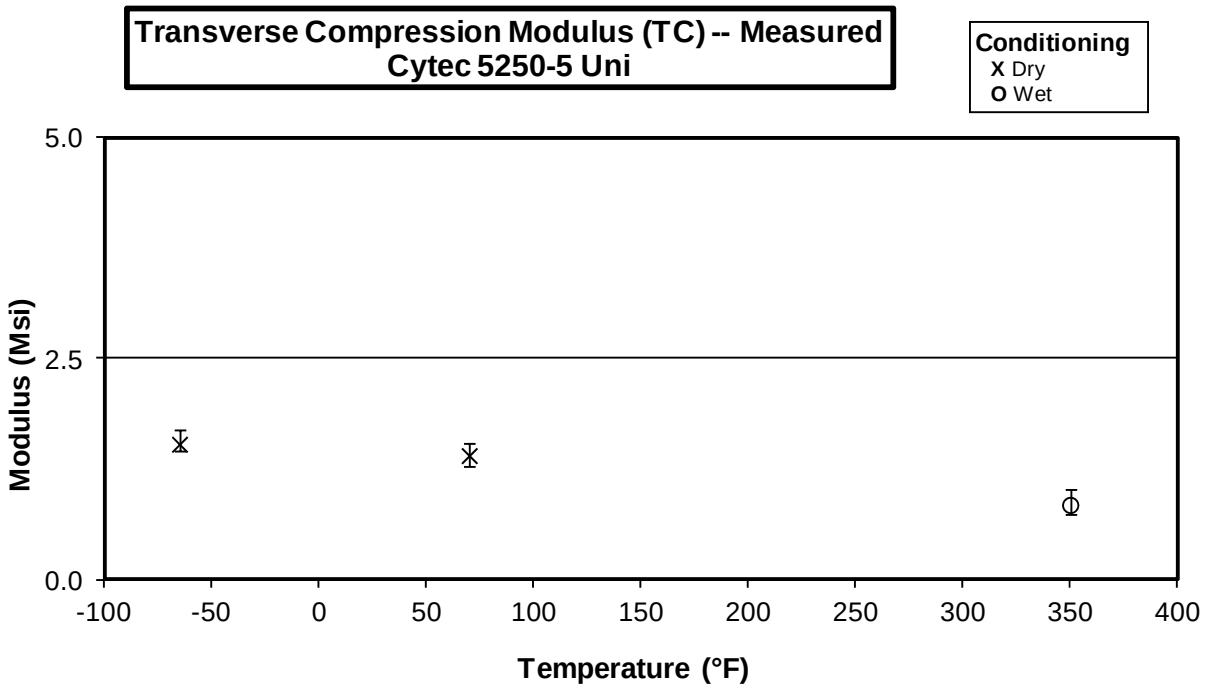


3.3 Longitudinal Compression Properties (LC)

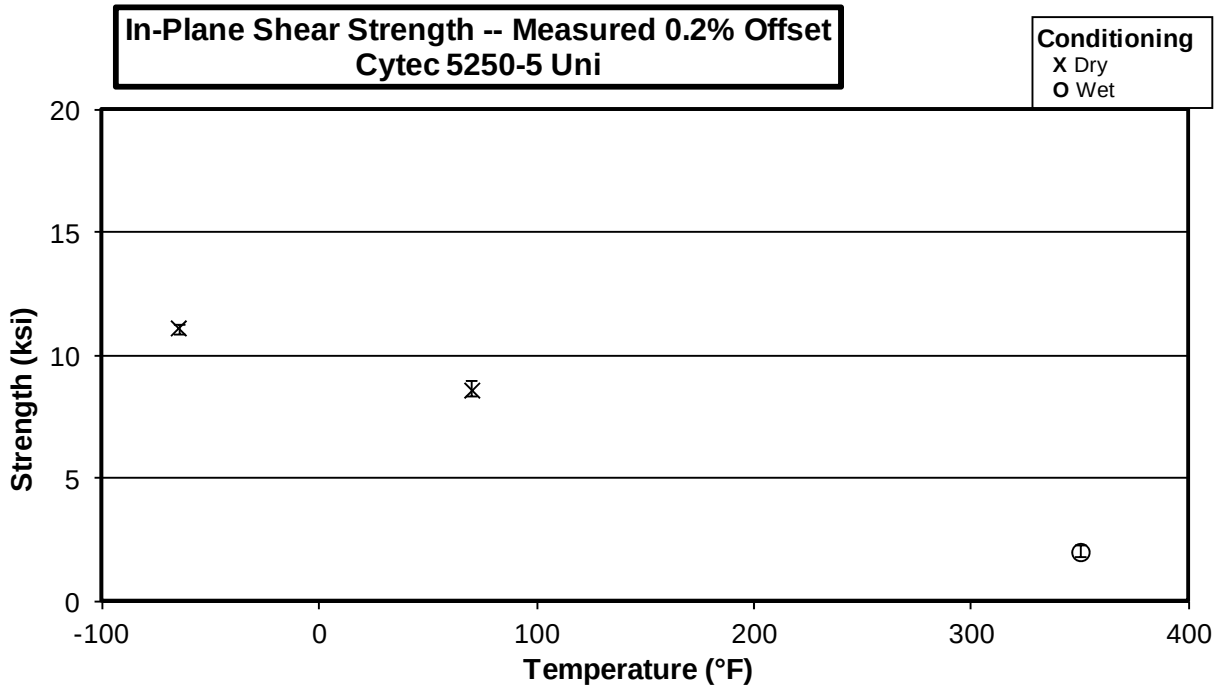


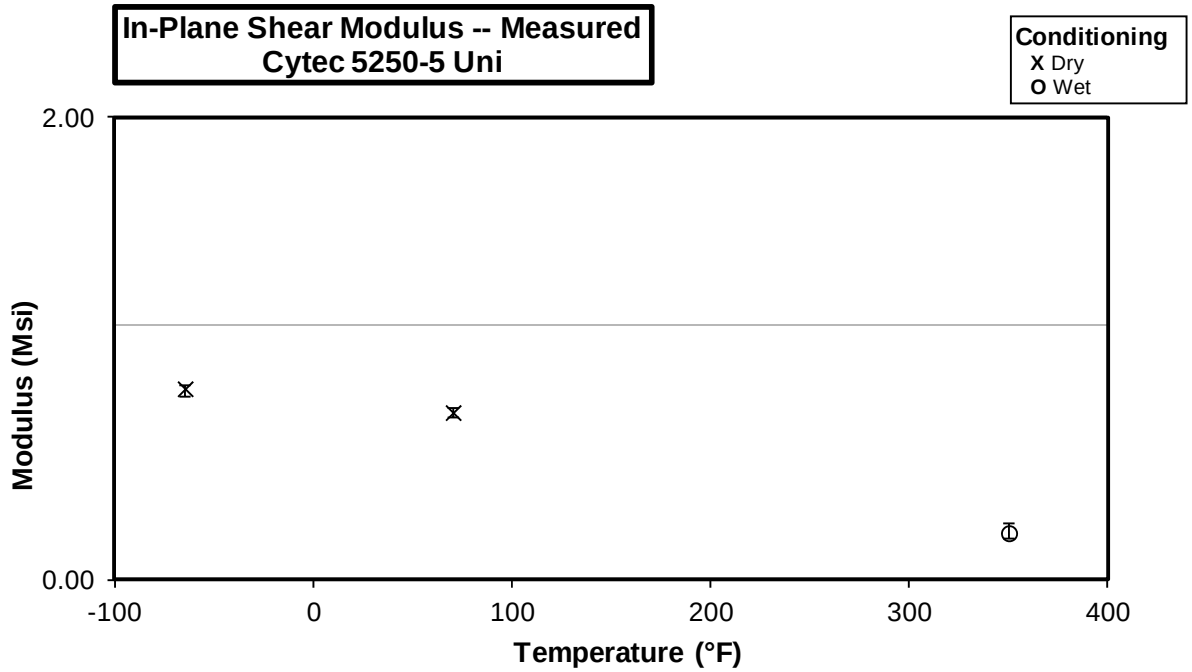
3.4 Transverse Compression Properties (TC)



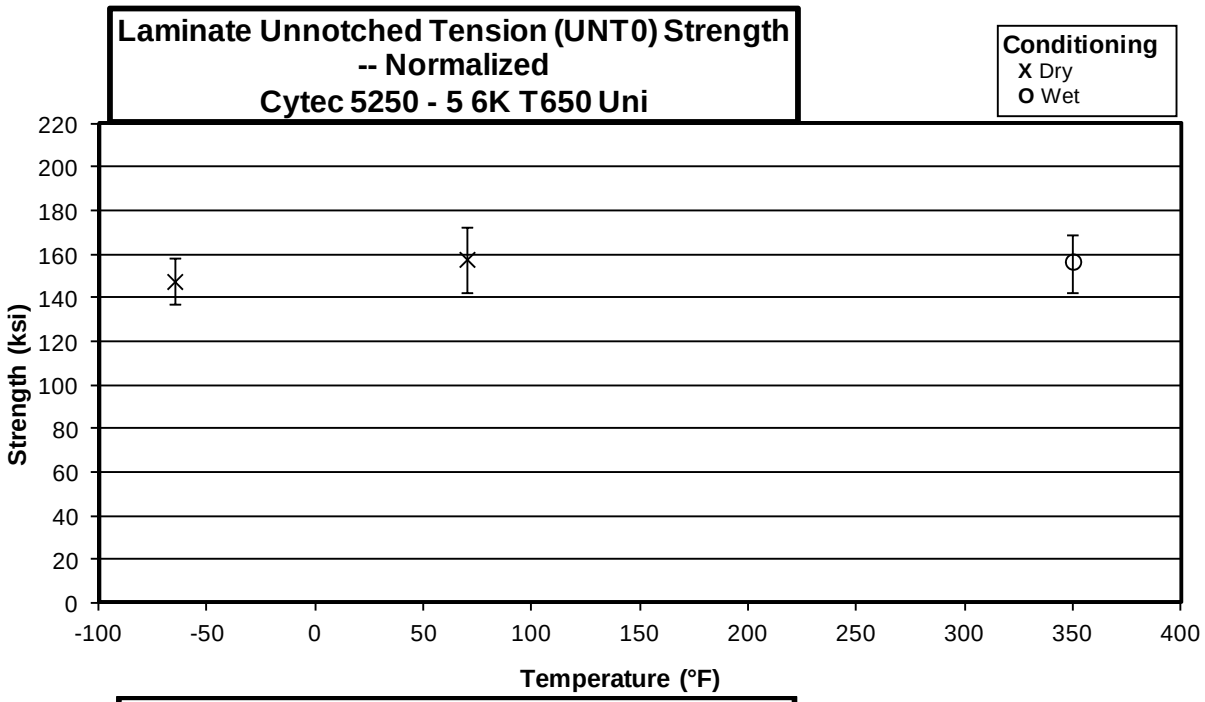


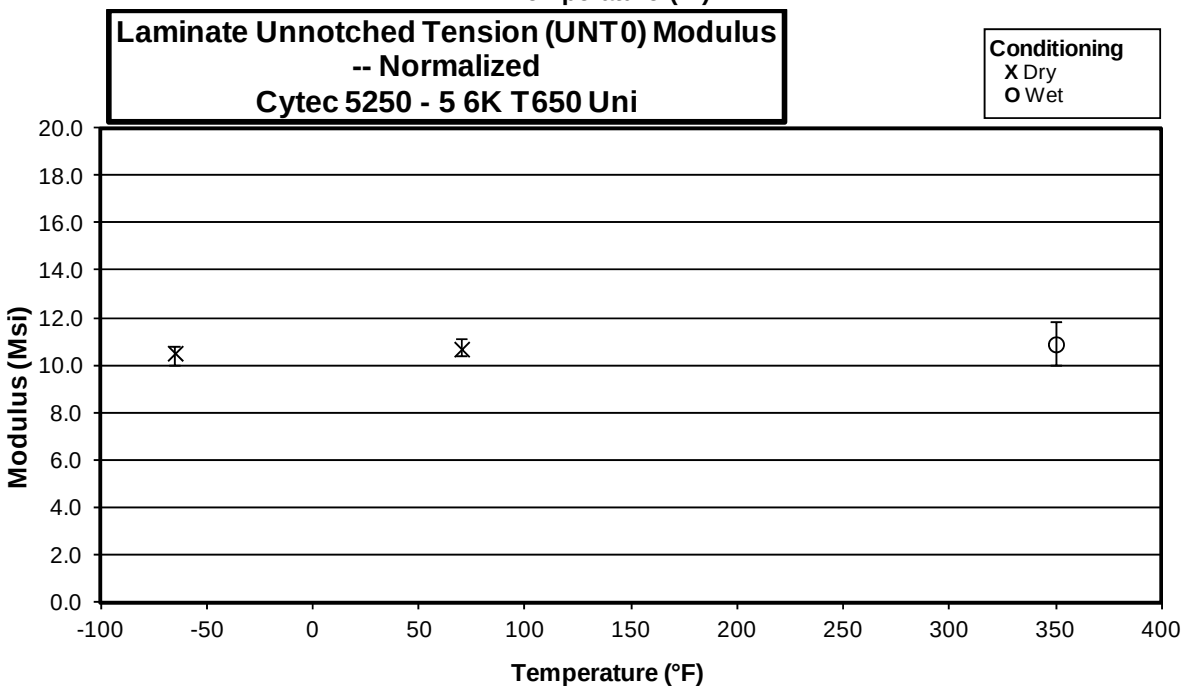
3.5 In-Plane Shear Properties (IPS)



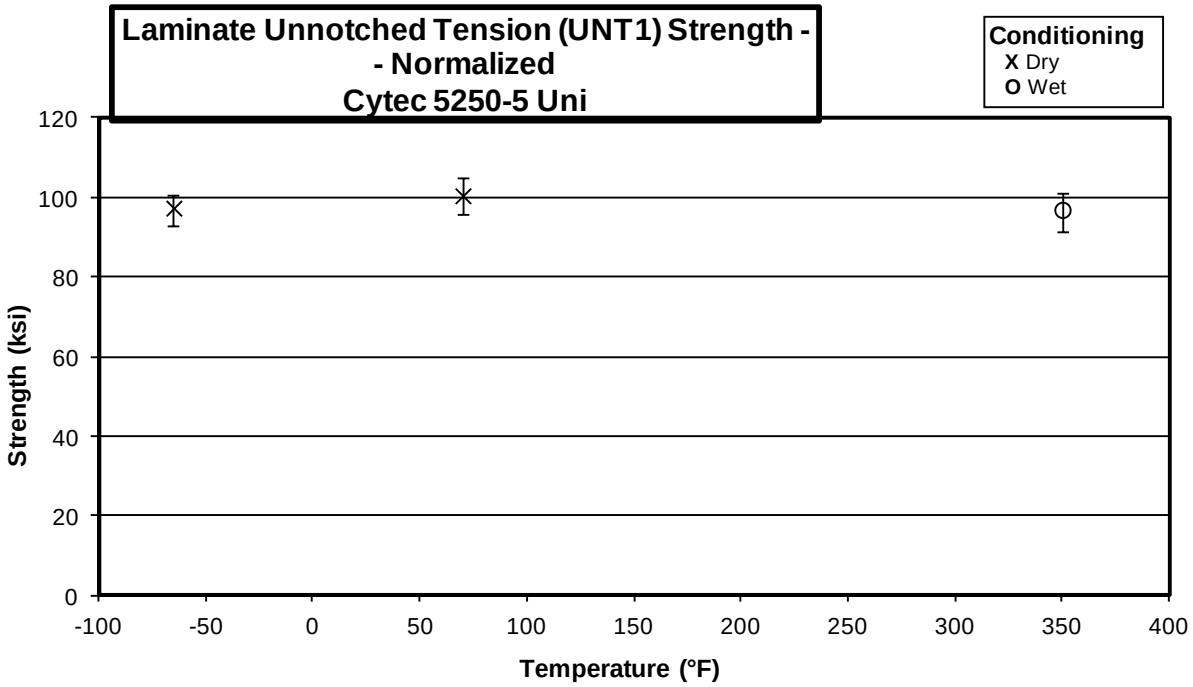


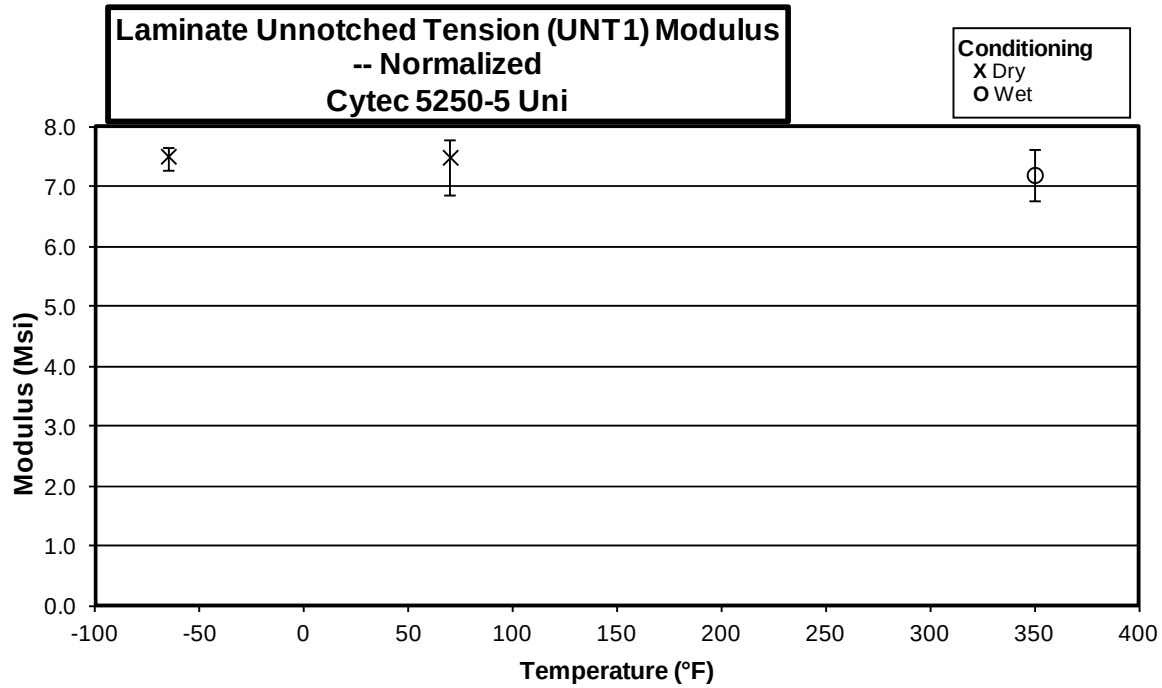
3.6 "50/0/50" Unnotched Tension 0 Properties (UNT0)



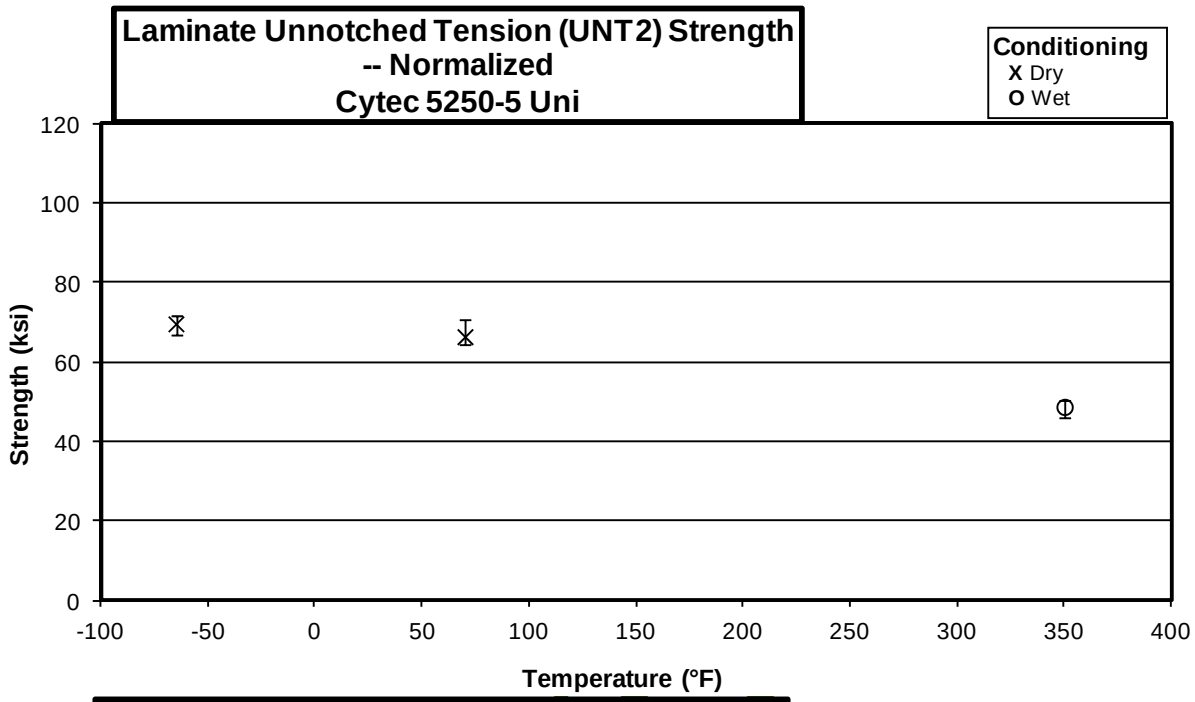


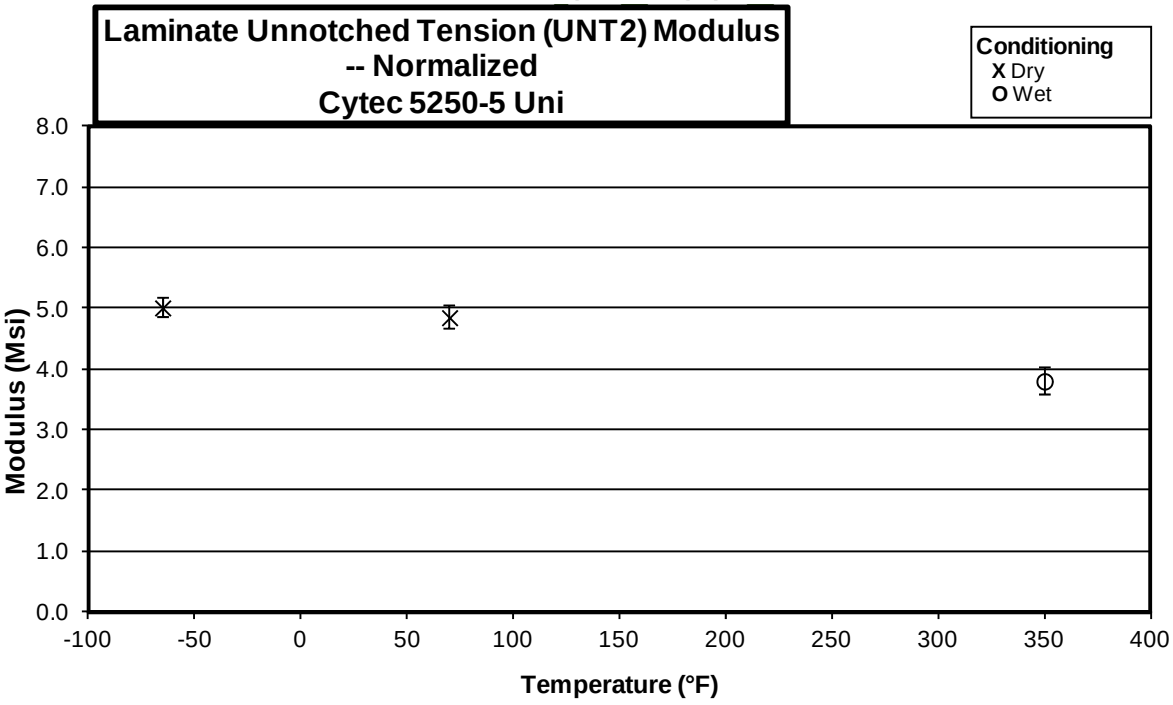
3.7 "25/50/25" Unnotched Tension 1 Properties (UNT1)



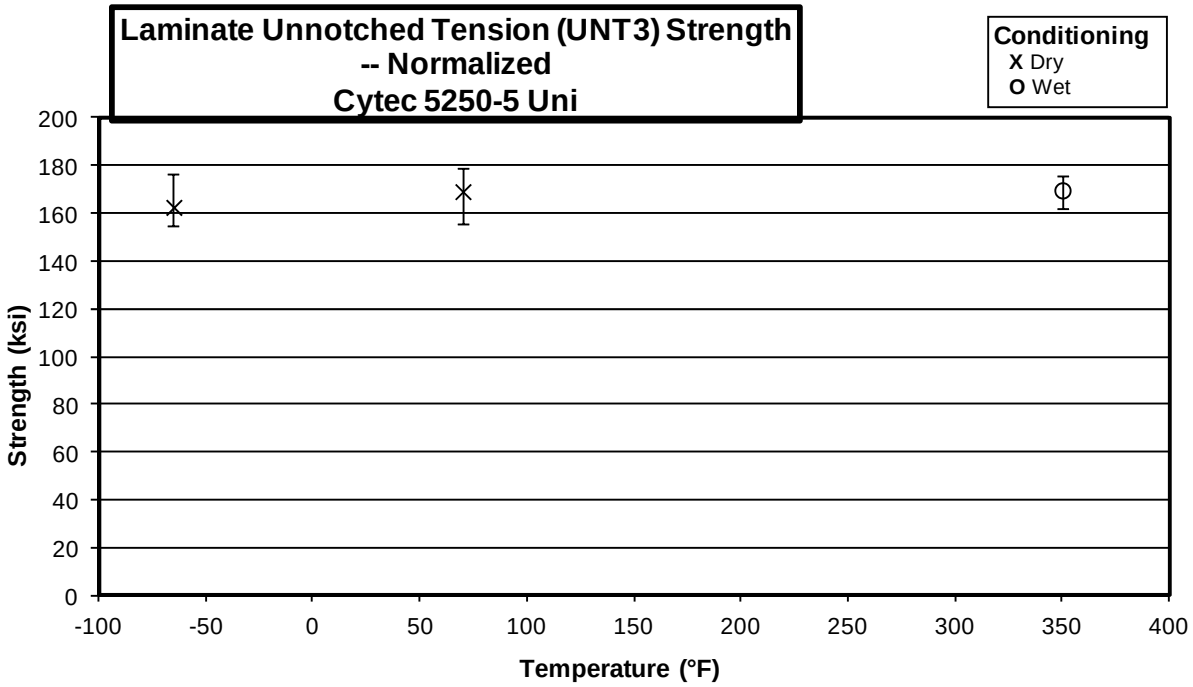


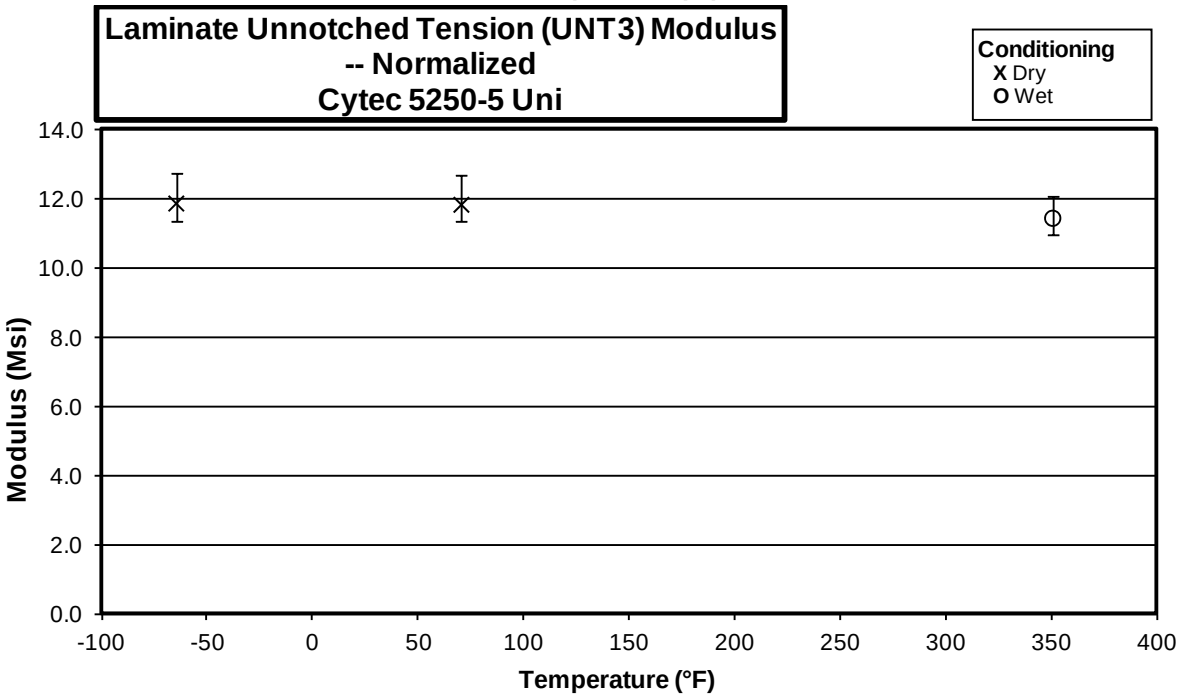
3.8 "10/80/10" Unnotched Tension 2 Properties (UNT2)



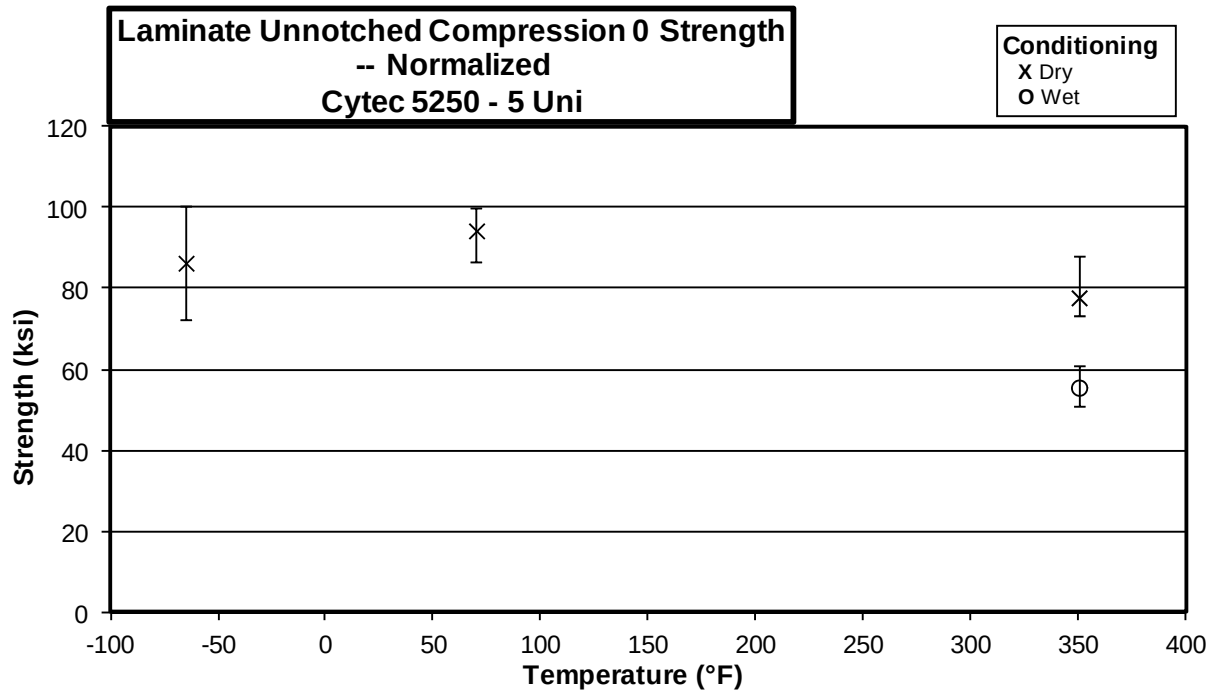


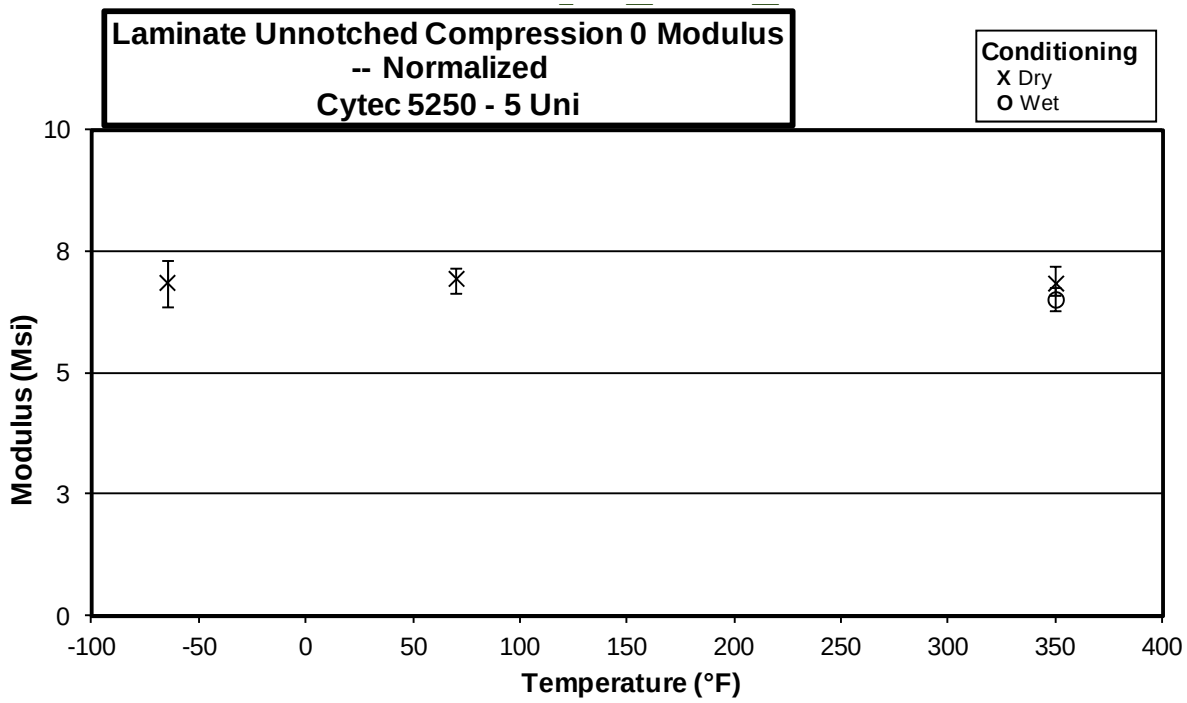
3.9 "50/40/10" Unnotched Tension 3 Properties (UNT3)



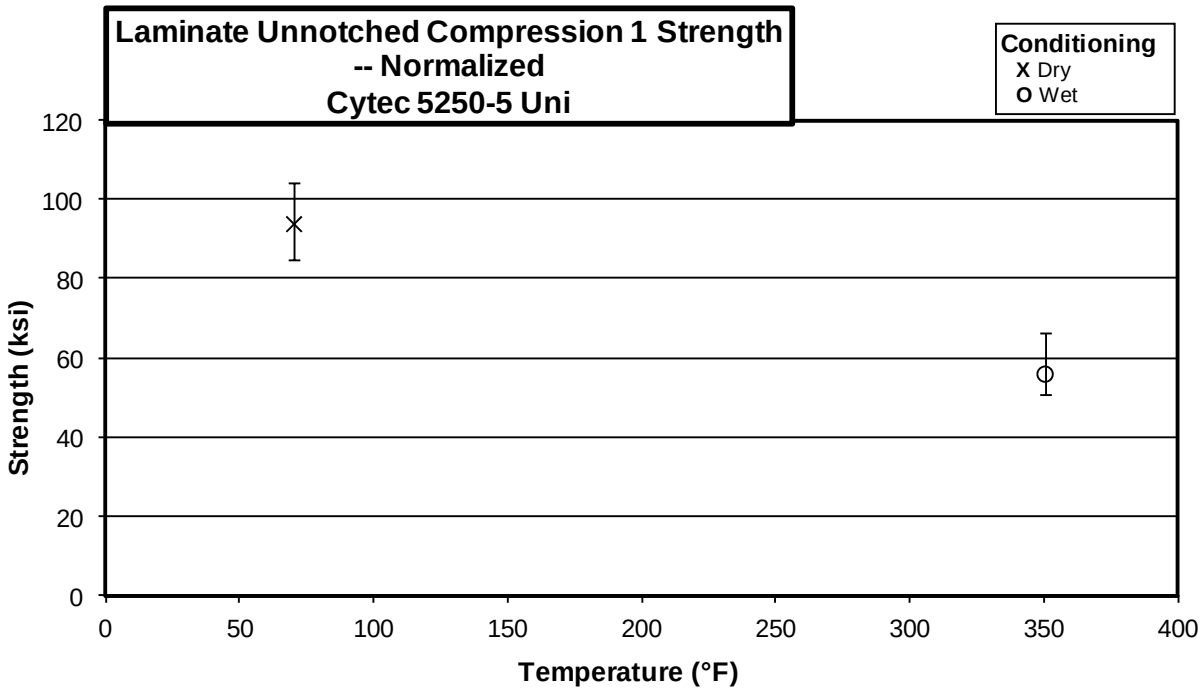


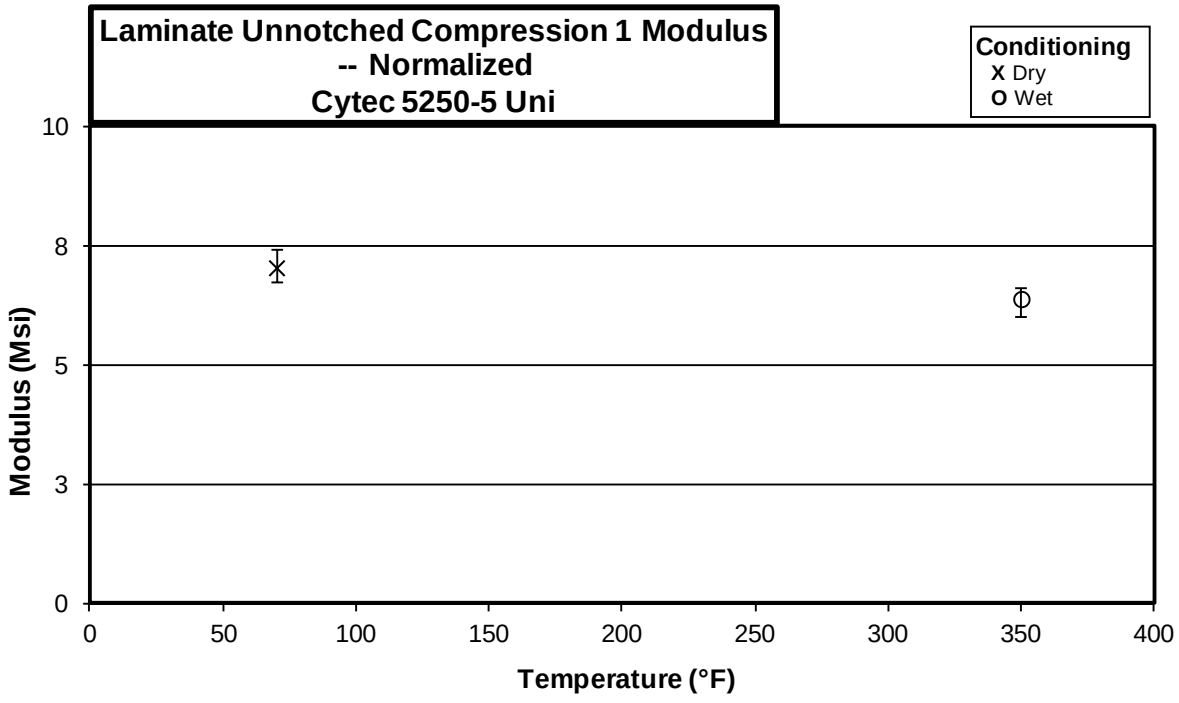
3.10 “33/0/67” Unnotched Compression 0 Properties (UNC0)



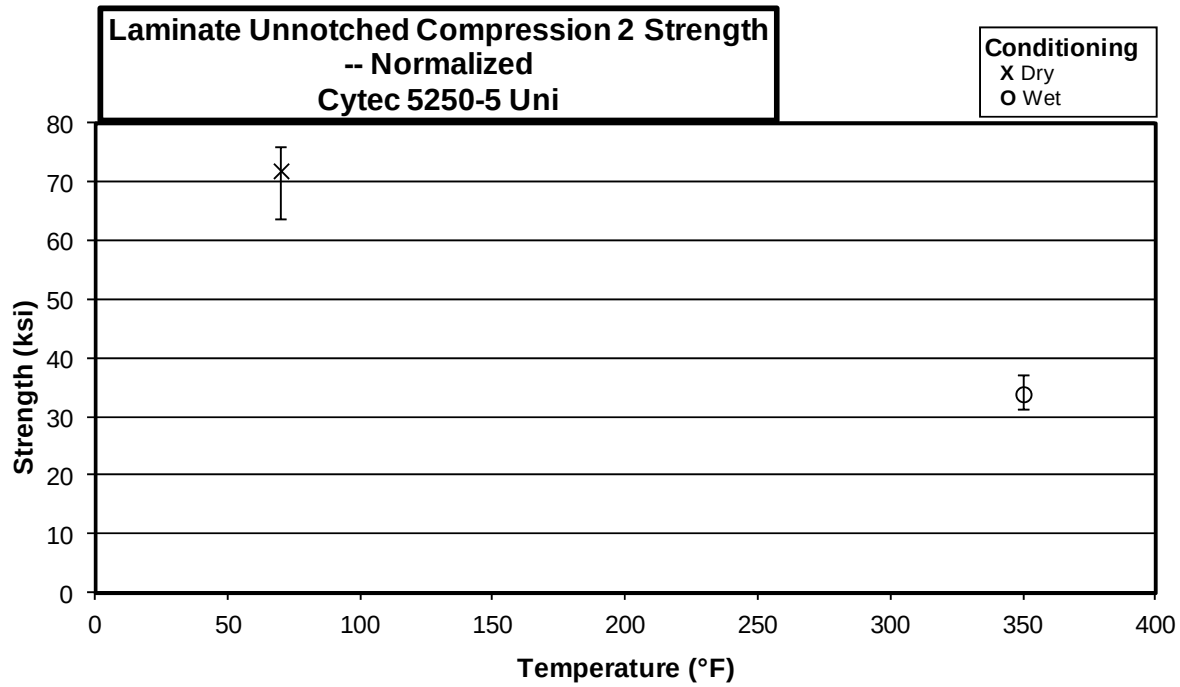


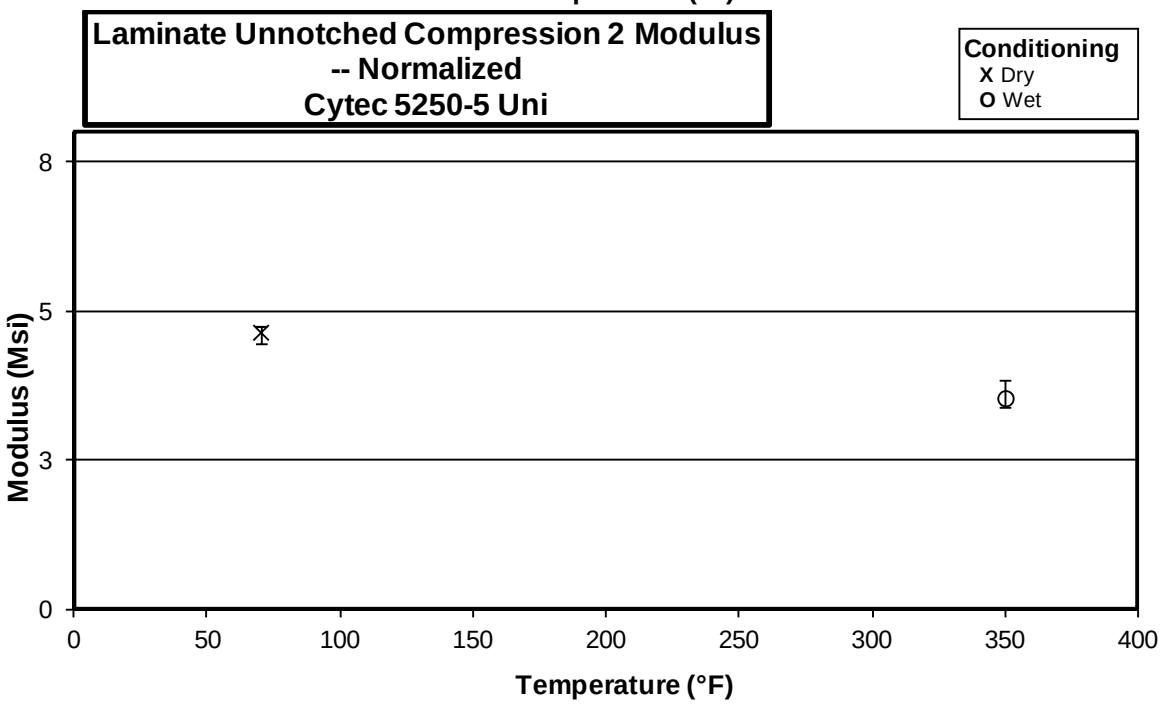
3.11 “25/50/25” Unnotched Compression 1 Properties (UNC1)



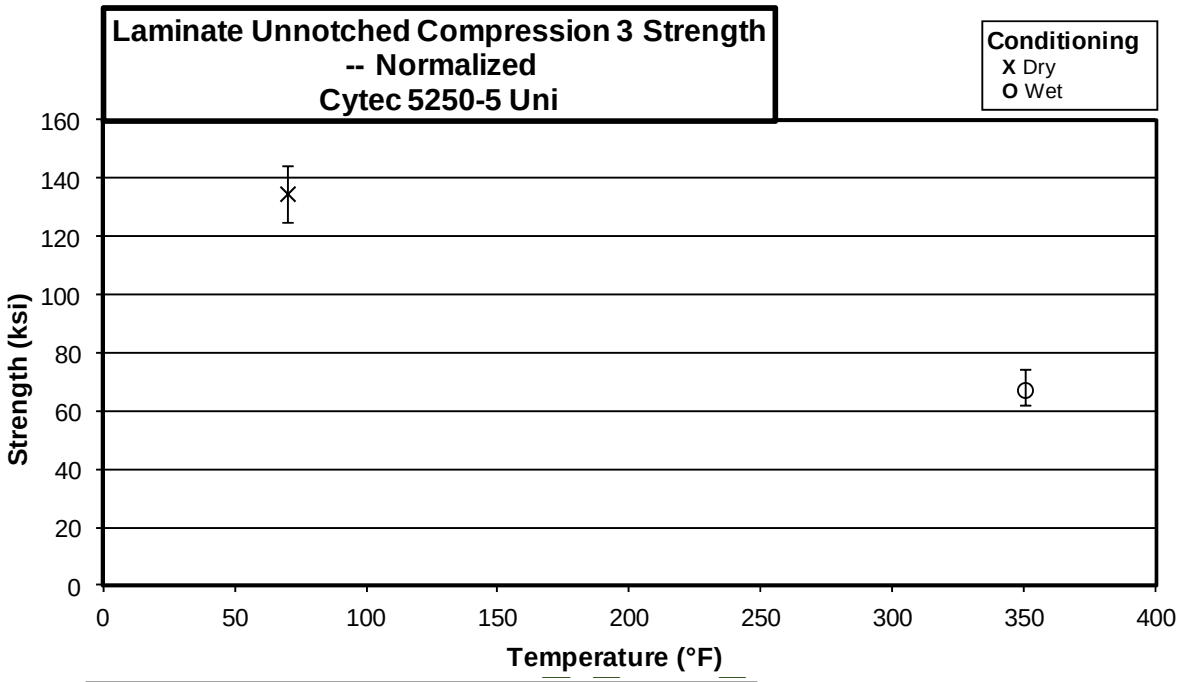


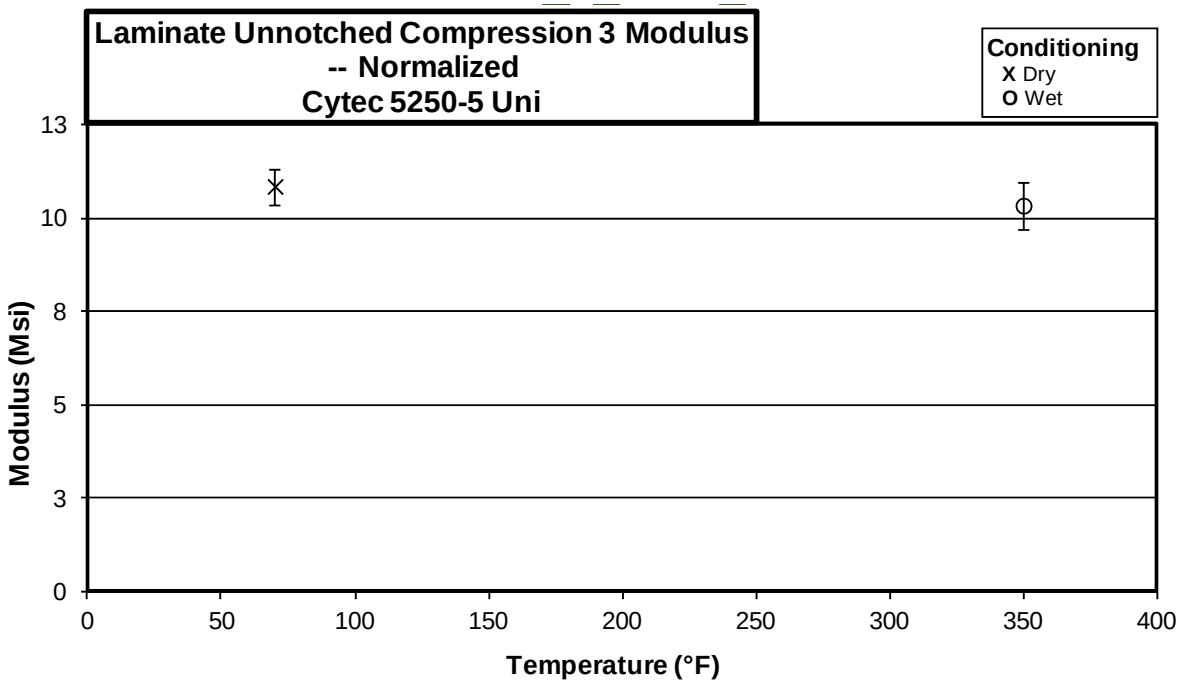
3.12 “10/80/10” Unnotched Compression 2 Properties (UNC2)



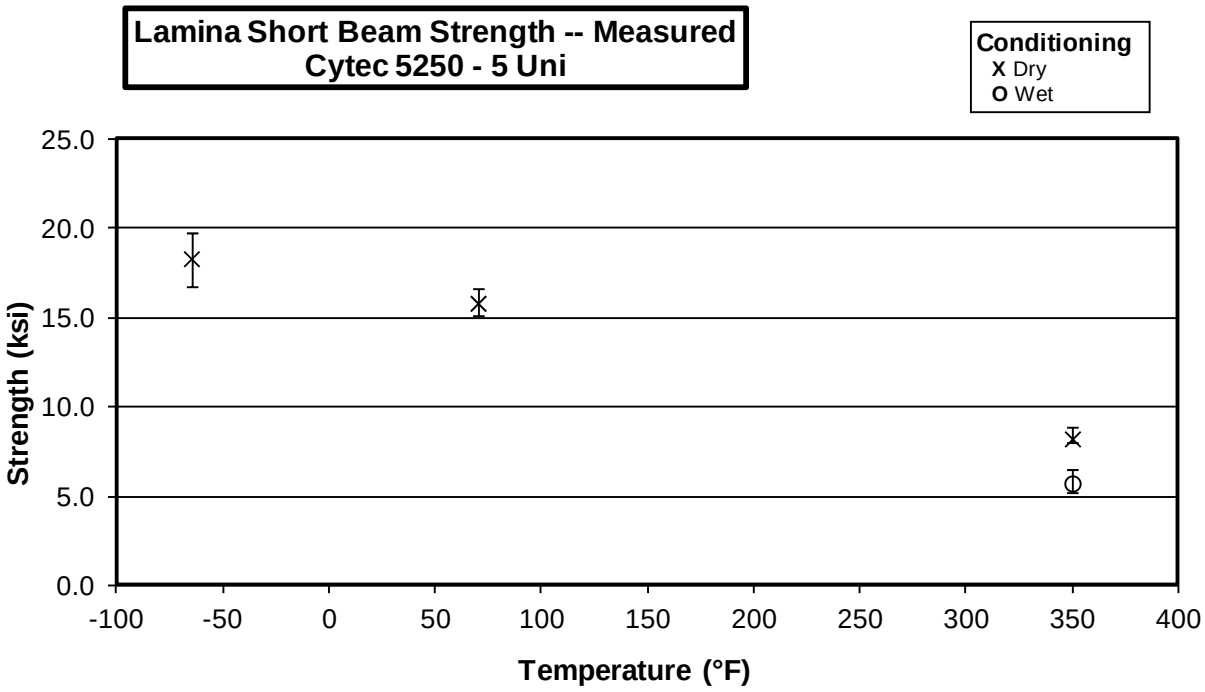


3.13 “50/40/10” Unnotched Compression 3 Properties (UNC3)

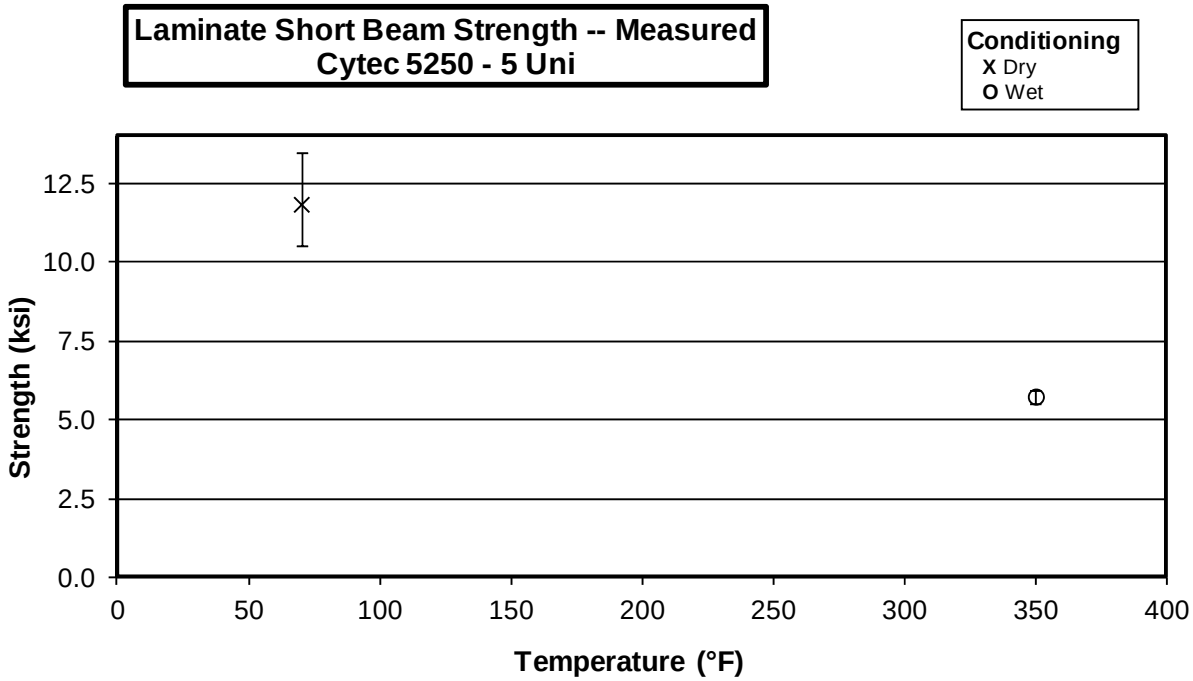




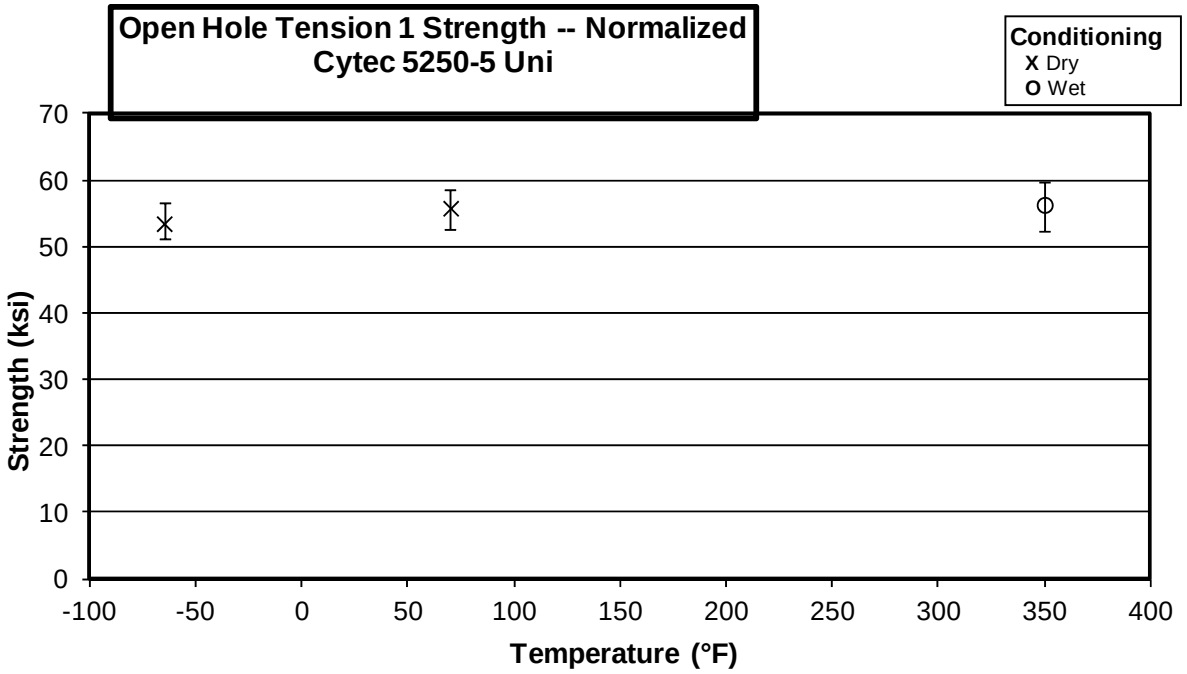
3.14 Lamina Short-Beam Shear Properties (SBS)



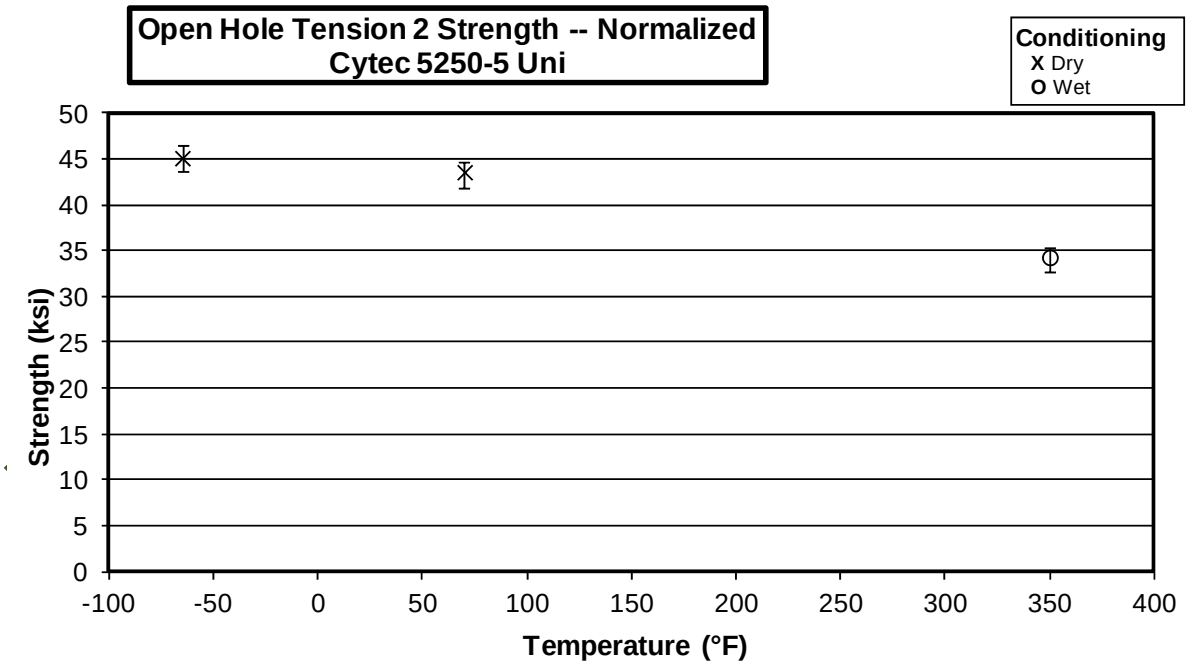
3.15 Laminate Short-Beam Strength Properties (SBS1)



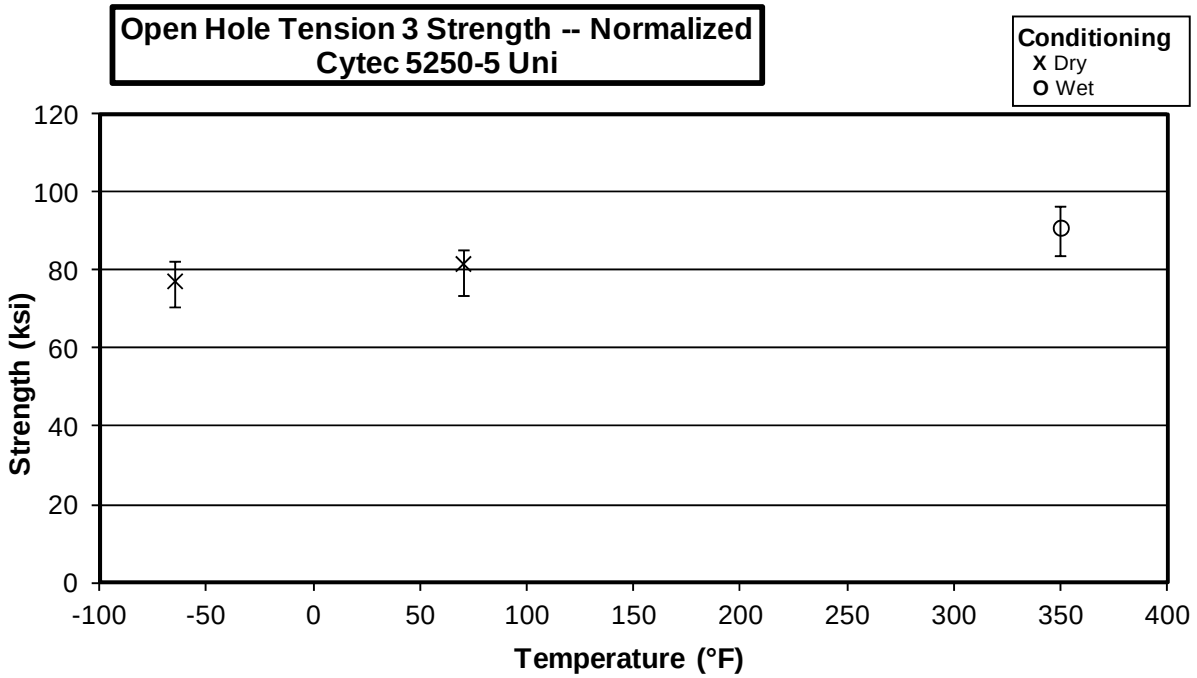
3.16 “25/50/25” Open-Hole Tension 1 Properties (OHT1)



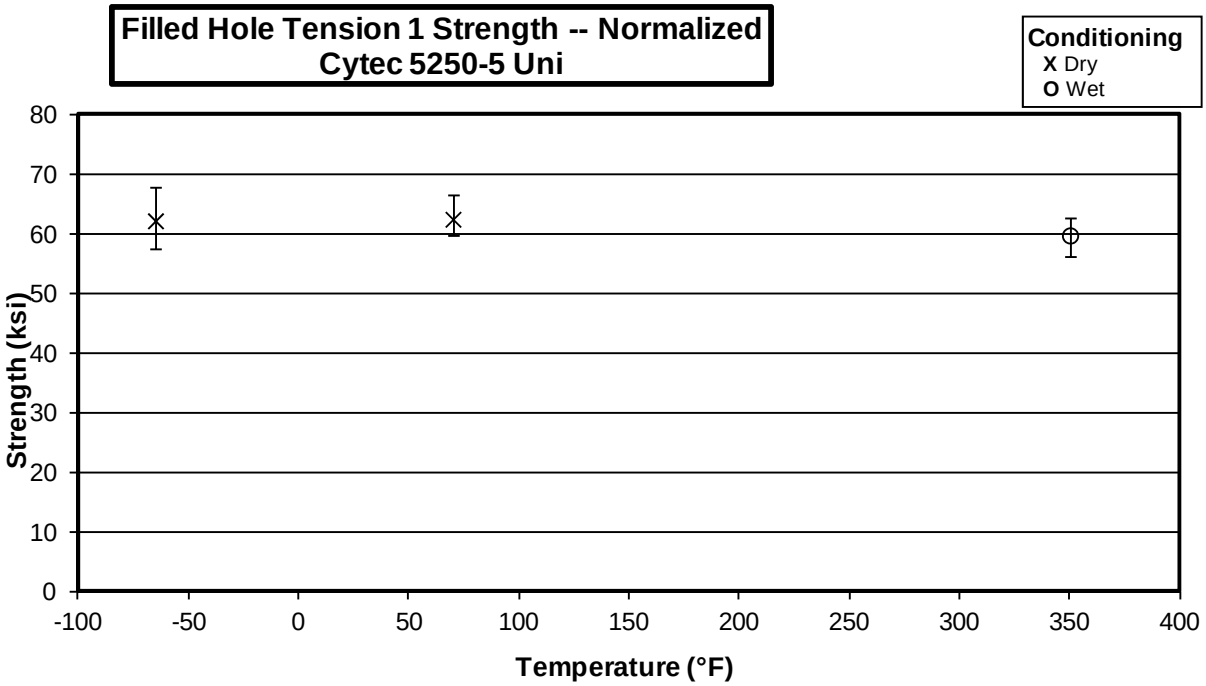
3.17 “10/80/10” Open-Hole Tension 2 Properties (OHT2)



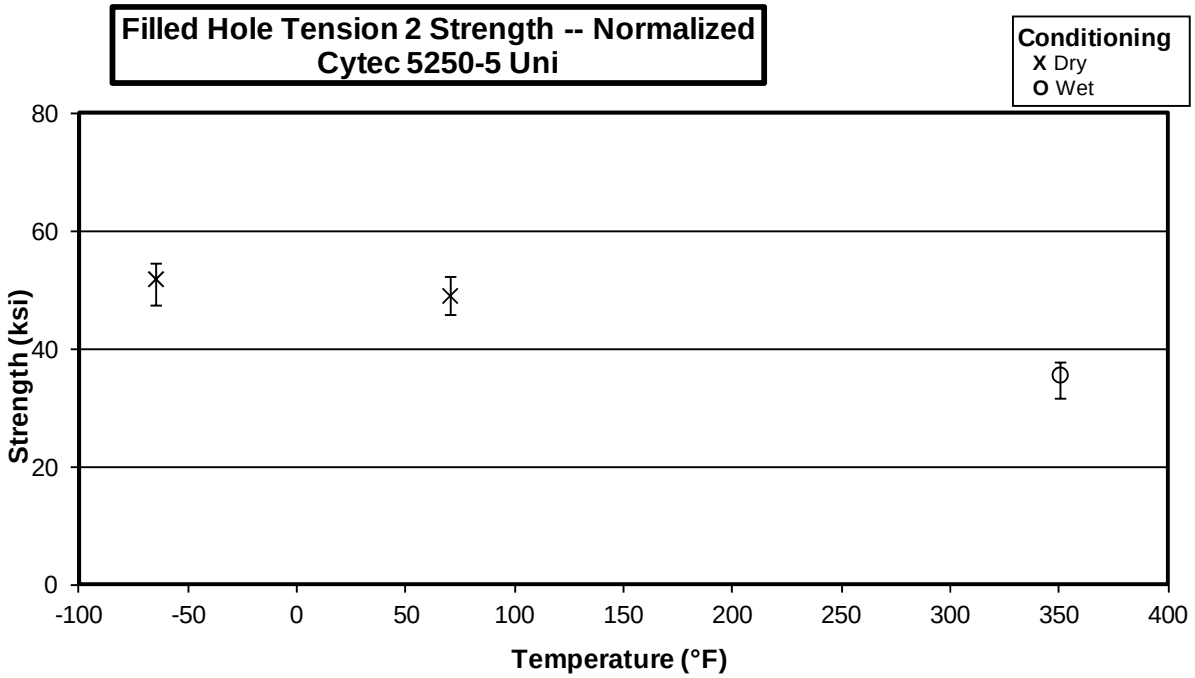
3.18 “50/40/10” Open-Hole Tension 3 Properties (OHT3)



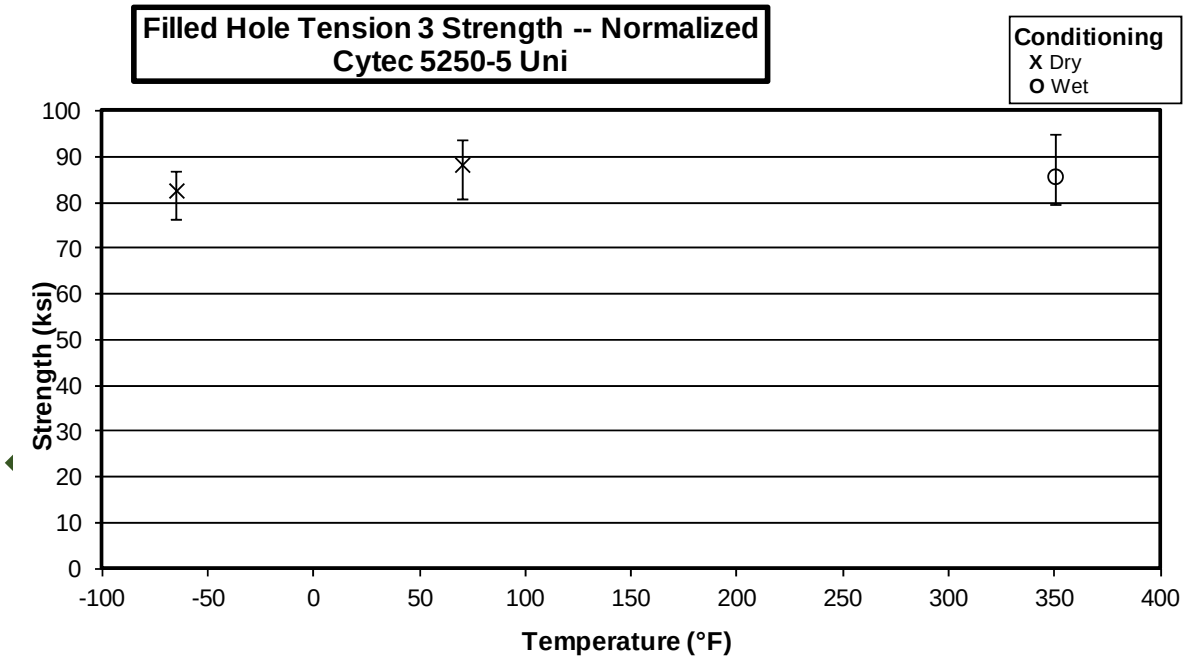
3.19 “25/50/25” Filled-Hole Tension 1 Properties (FHT1)



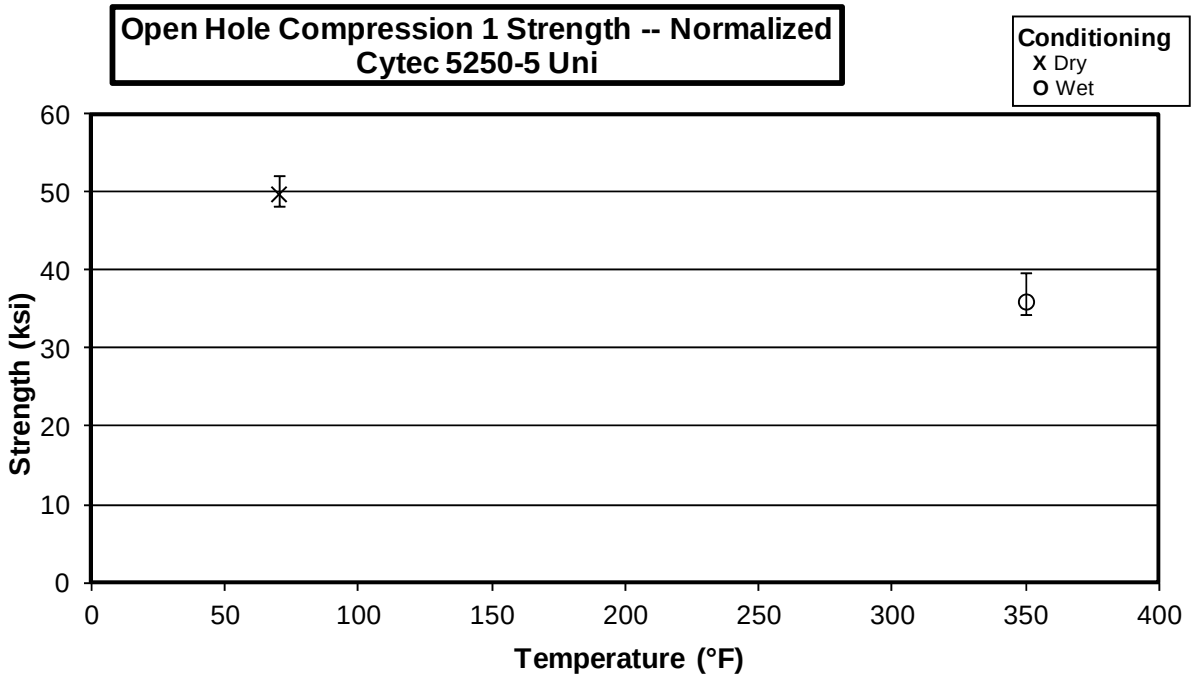
3.20 “10/80/10” Filled-Hole Tension 2 Properties (FHT2)



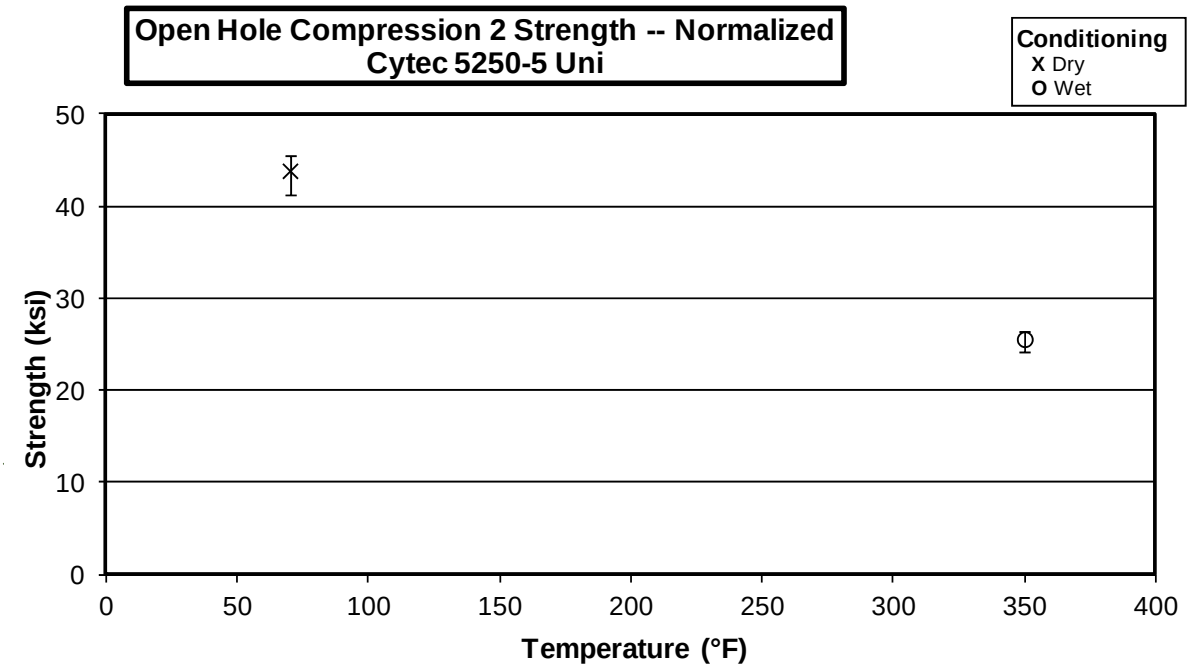
3.21 “50/40/10” Filled-Hole Tension 3 Properties (FHT3)



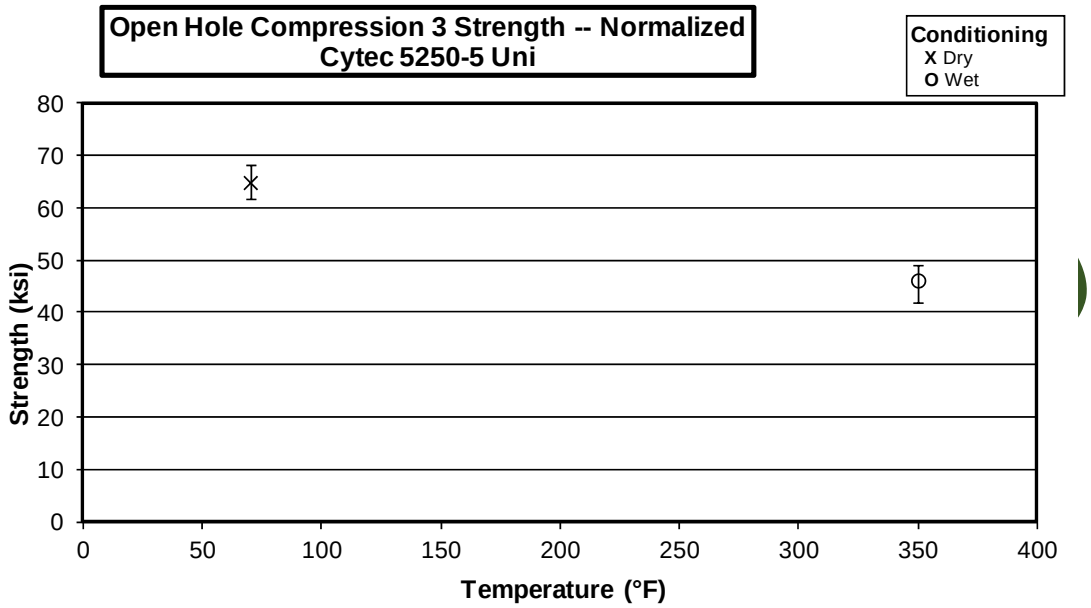
3.22 “25/50/25” Open-Hole Compression 1 Properties (OHC1)



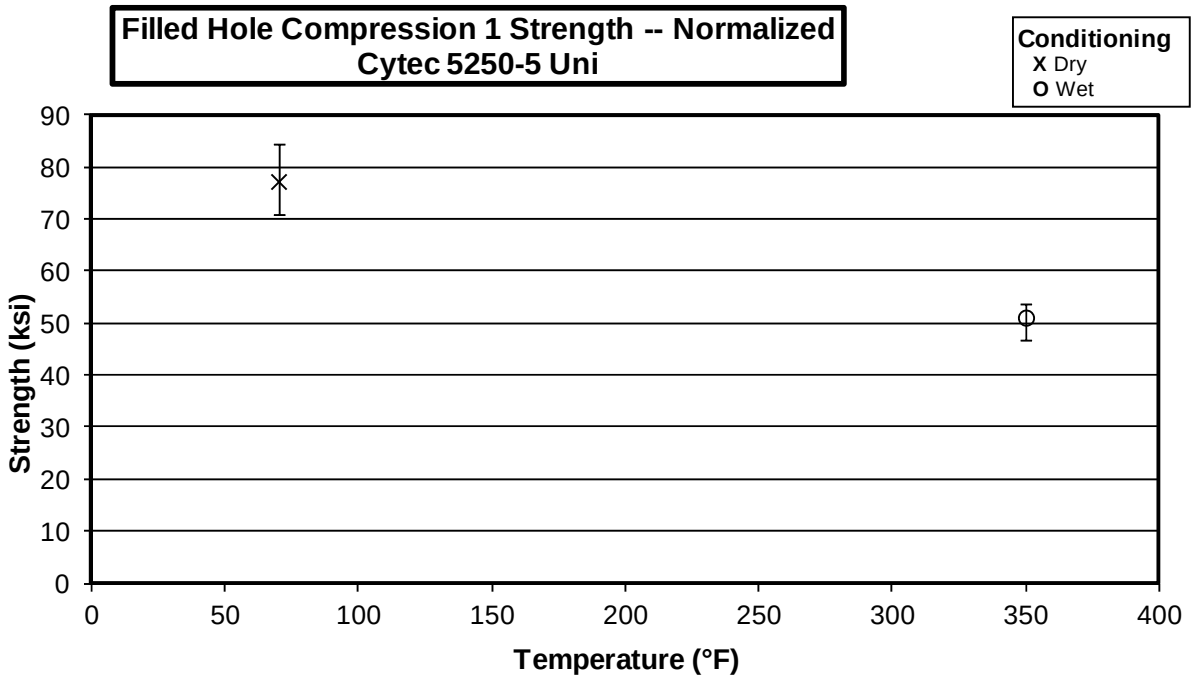
3.23 “10/80/10” Open-Hole Compression 2 Properties (OHC2)



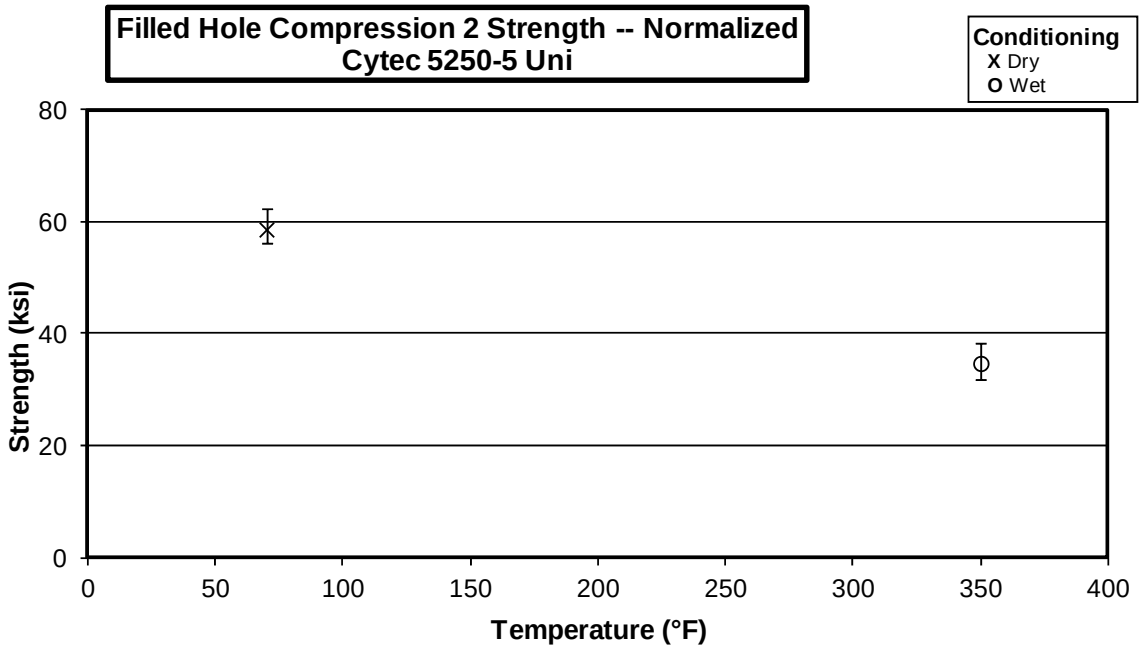
3.24 “50/40/10” Open-Hole Compression 3 Properties (OHC3)



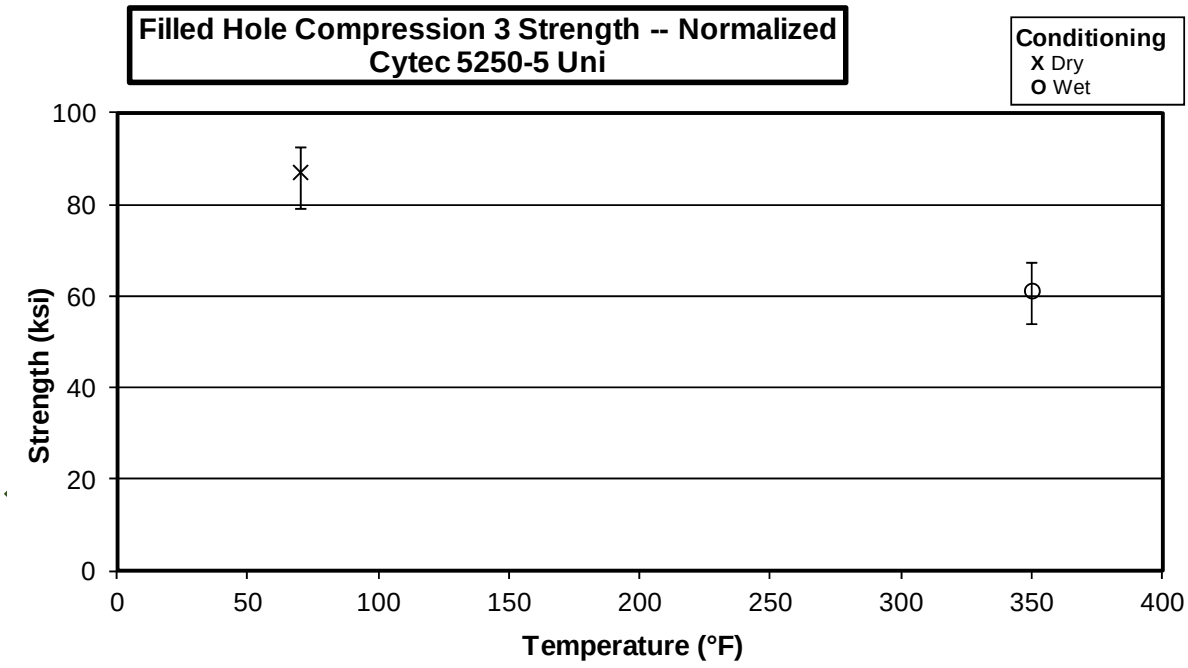
3.25 “25/50/25” Filled-Hole Compression 1 Properties (FHC1)



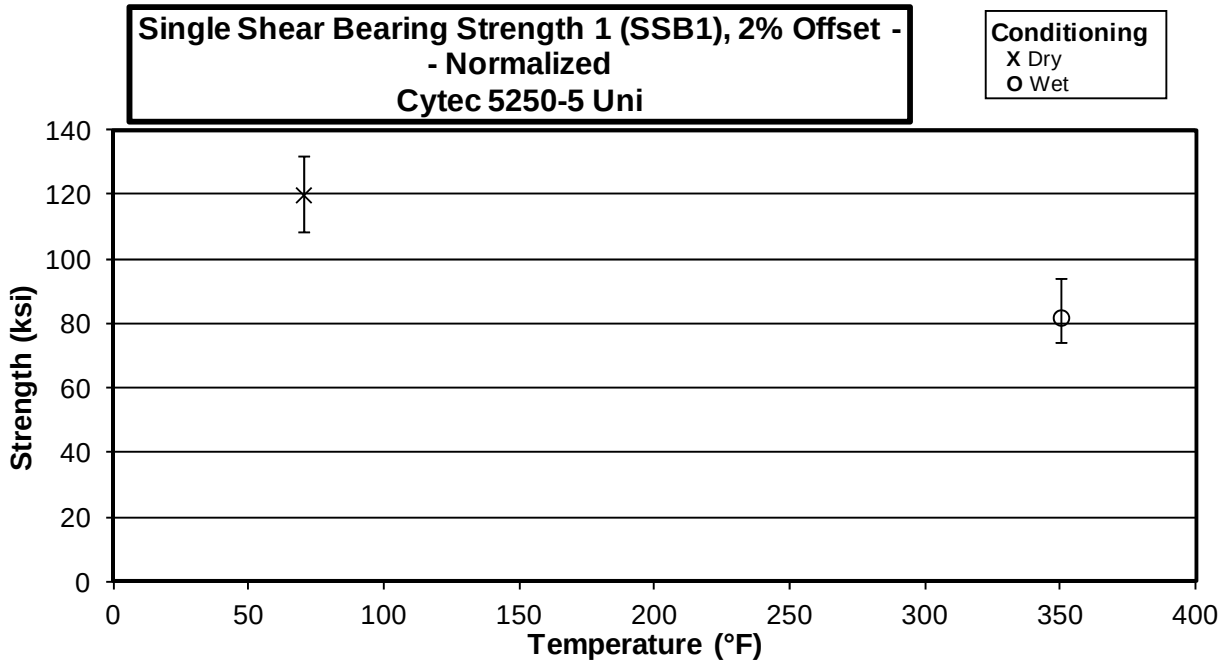
3.26 “10/80/10” Filled-Hole Compression 2 Properties (FHC2)



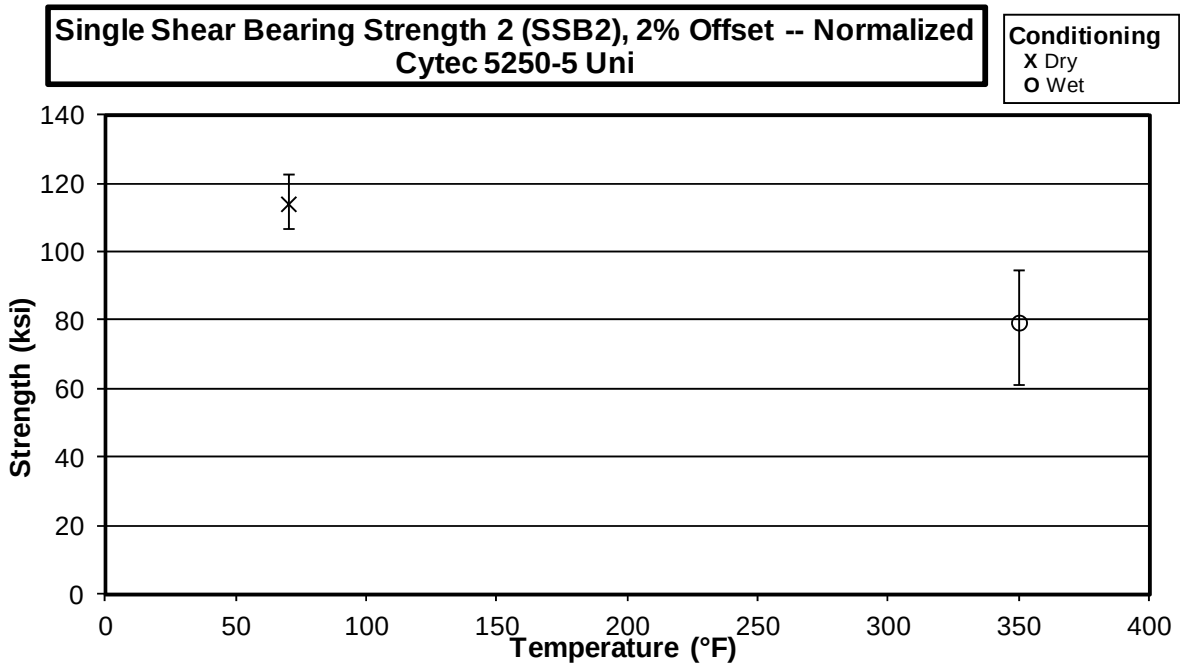
3.27 “50/40/10” Filled-Hole Compression 3 Properties (FHC3)



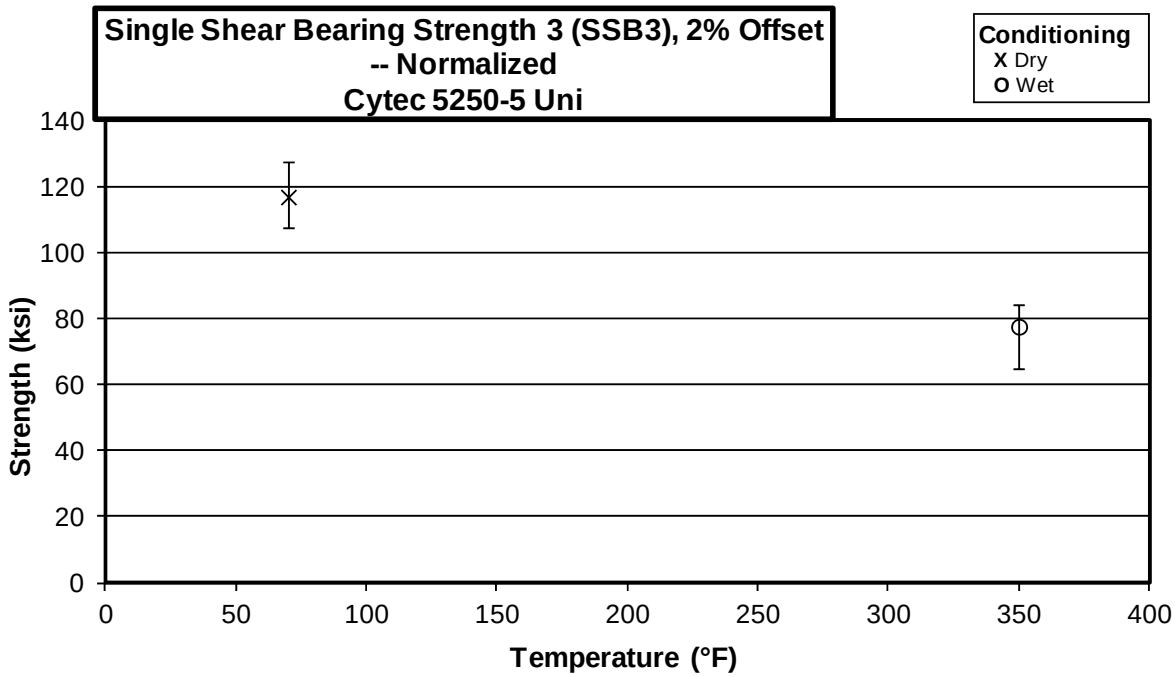
3.28 “25/50/25” Single-Shear Bearing Strength1 Properties (SSB1)



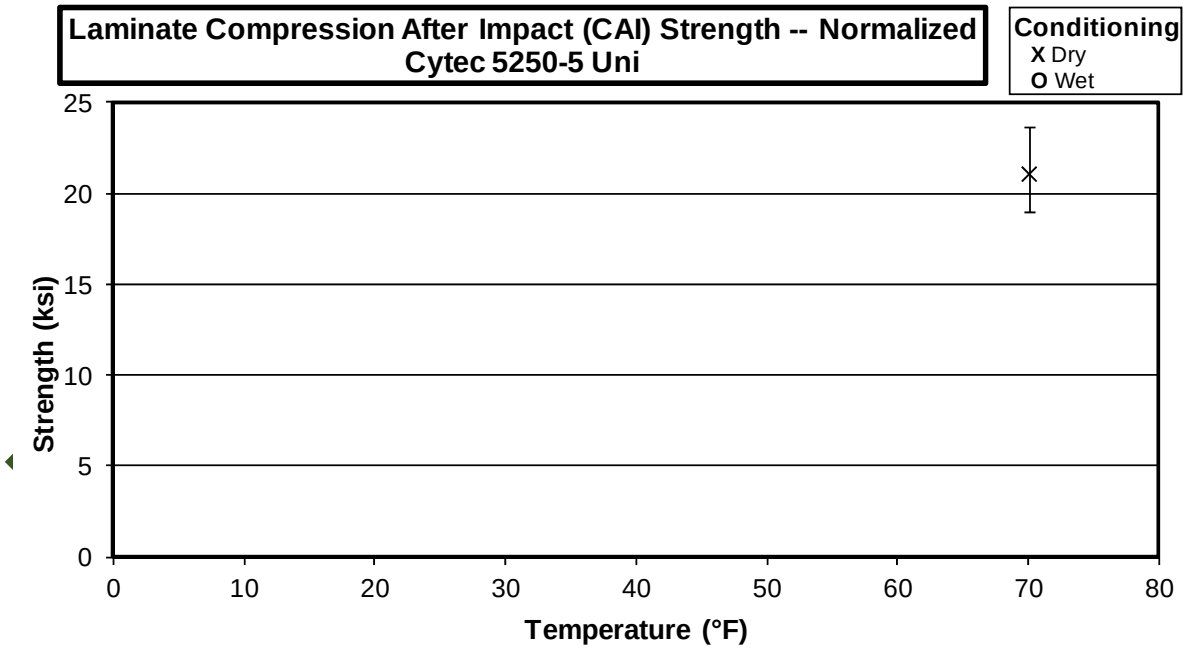
3.29 “10/80/10” Single-Shear Bearing Strength 2 Properties (SSB2)



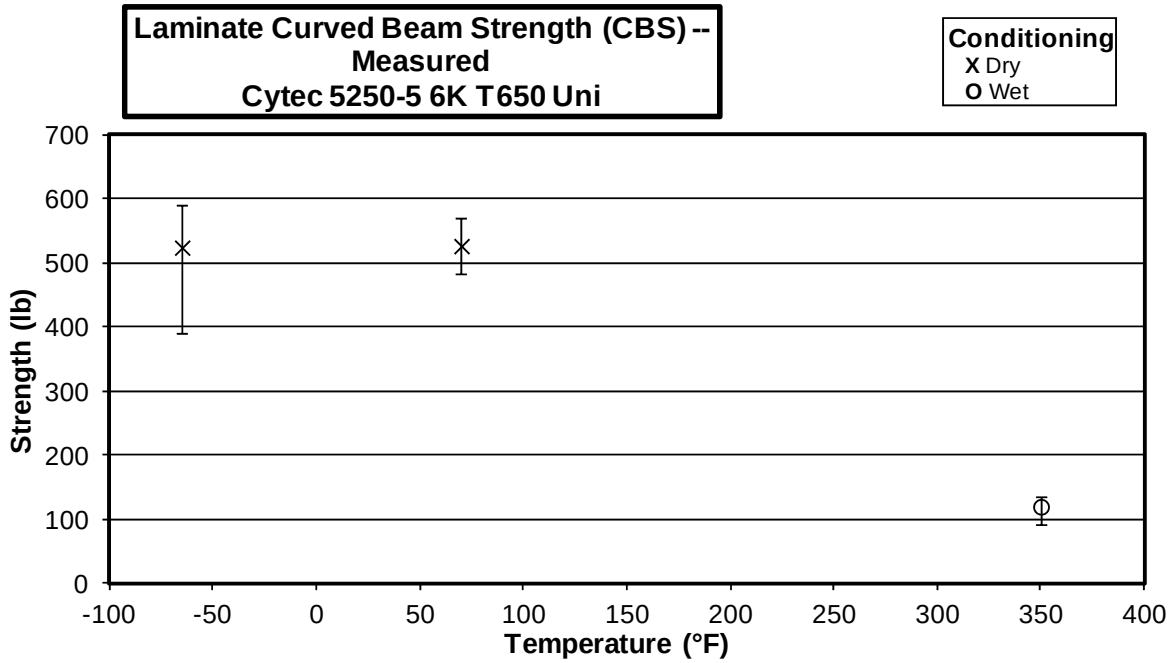
3.30 "50/40/10" Single-Shear Bearing 3 Properties (SSB3)

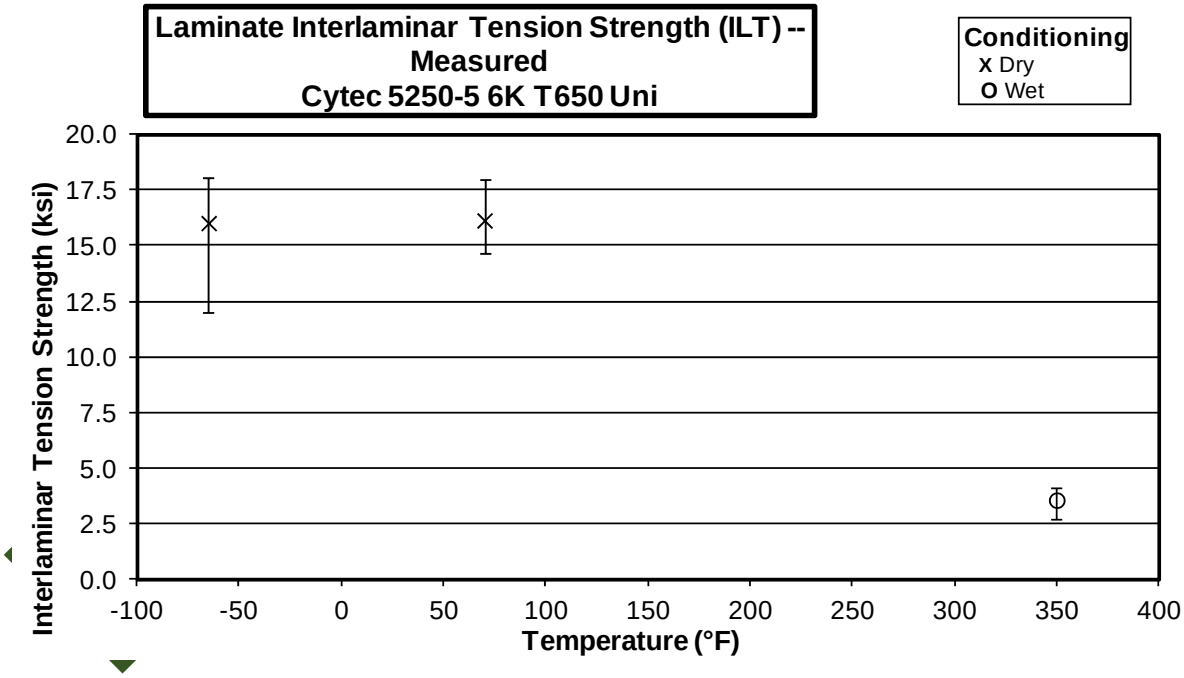


3.31 Compression After Impact 1 Properties (CAI1)



3.32 Interlaminar Tension Properties (ILT)





4. Raw Data

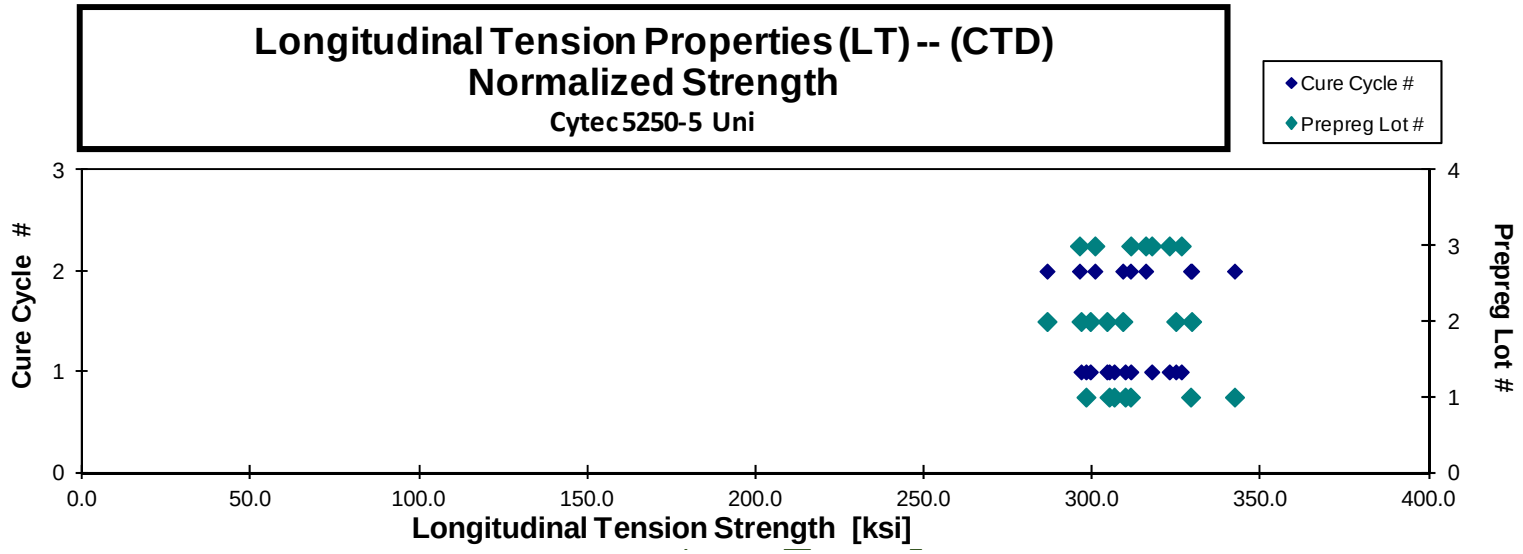
4.1 Longitudinal Tension Properties (LT)

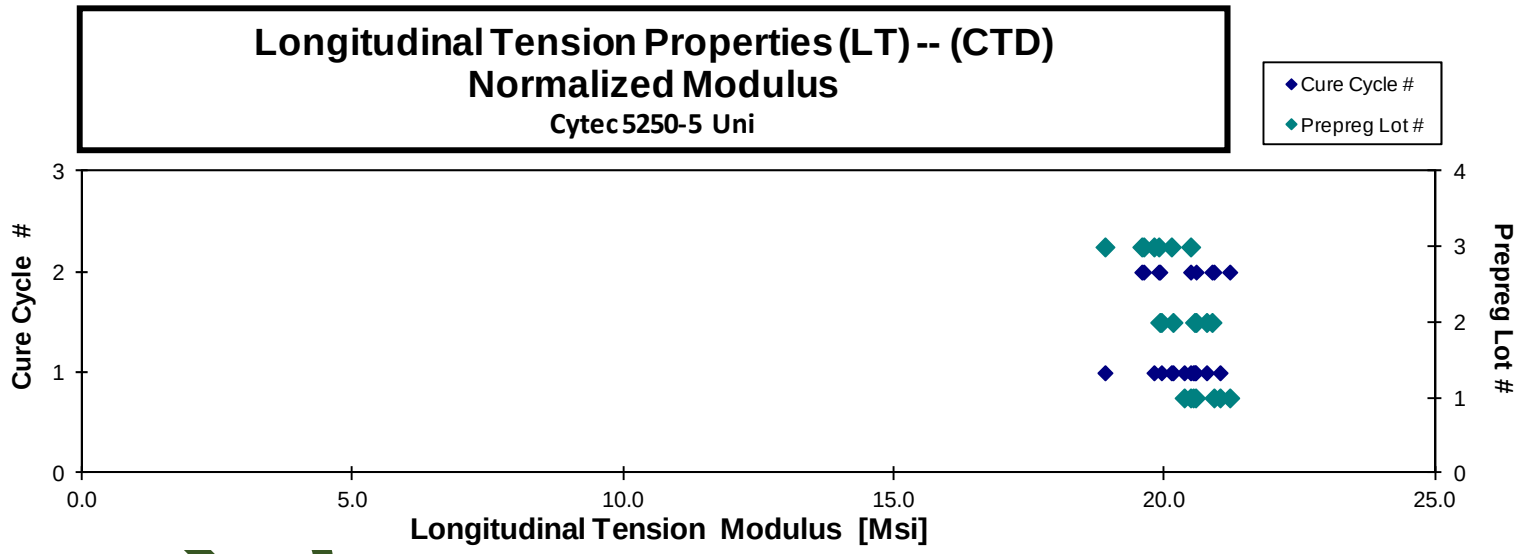
Longitudinal Tension Properties (LT) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAJA116B	A	C1	1	1	303.311	20.914	0.380	0.044	8	XGM	0.0055	304.920	21.025
CNAJA117B	A	C1	1	1	295.812	20.374	0.344	0.044	8	XGM	0.0055	298.053	20.528
CNAJA118B	A	C1	1	1	312.633	20.769	0.327	0.044	8	XGM	0.0054	309.672	20.572
CNAJA119B	A	C1	1	1	304.906	20.261	0.272	0.044	8	XGM	0.0055	306.407	20.361
CNAJA216B	A	C2	1	2	343.868	21.015	0.326	0.044	8	XGM	0.0055	342.175	20.911
CNAJA217B	A	C2	1	2	312.092	21.260	0.333	0.044	8	XGM	0.0055	311.264	21.204
CNAJA218B	A	C2	1	2	328.881	20.466	0.251	0.044	8	XGM	0.0055	329.130	20.481
CNAJB116B	B	C1	2	1	302.209	20.536	0.333	0.043	8	XGM	0.0054	296.599	20.155
CNAJB117B	B	C1	2	1	312.329	21.097	0.311	0.043	8	XGM	0.0054	304.284	20.554
CNAJB118B	B	C1	2	1	306.051	21.242	0.325	0.043	8	XGM	0.0054	299.328	20.776
CNAJB119B	B	C1	2	1	332.673	20.428	0.344	0.043	8	XGM	0.0054	324.734	19.941
CNAJB215B	B	C2	2	2	332.587	21.075	0.296	0.044	8	XGM	0.0054	329.437	20.875
CNAJB216B	B	C2	2	2	313.509	20.883	0.306	0.043	8	XGM	0.0054	308.996	20.583
CNAJB217B	B	C2	2	2	291.114	20.233	0.270	0.043	8	XGM	0.0054	286.483	19.911
CNAJC116B	C	C1	3	1	312.295	18.955	0.153	0.044	8	SGM	0.0055	311.348	18.898
CNAJC117B	C	C1	3	1	325.645	20.302	0.303	0.044	8	XGM	0.0055	322.807	20.125
CNAJC118B	C	C1	3	1	329.350	19.985	0.267	0.044	8	XGM	0.0055	326.356	19.804
CNAJC119B	C	C1	3	1	320.497	20.669	0.346	0.044	8	XGM	0.0055	317.583	20.482
CNAJC215B	C	C2	3	2	299.298	20.104	0.354	0.044	8	XGM	0.0054	296.124	19.891
CNAJC216B	C	C2	3	2	304.387	19.854	0.311	0.043	8	SGM	0.0054	300.698	19.613
CNAJC217B	C	C2	3	2	329.153	19.850	0.324	0.043	8	XGM	0.0054	315.787	19.580

Average	**314.457**	**20.489**	**0.308**	**$Average_{norm}$**	**0.0054**	**311.533**	**20.298**
Standard Dev.	**13.835**	**0.563**	**0.048**	**$Standard\ Dev._{norm}$**		**13.809**	**0.562**
Coeff. of Var. [%]	**4.400**	**2.747**	**15.531**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**4.432**	**2.769**
Min.	**291.114**	**18.955**	**0.153**	**Min.**	**0.0054**	**286.483**	**18.898**
Max.	**343.868**	**21.260**	**0.380**	**Max.**	**0.0055**	**342.175**	**21.204**
Number of Spec.	**21**	**21**	**21**	**Number of Spec.**		**21**	**21**


Longitudinal Tension Properties (LT) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0
Longitudinal Tension Strength [ksi]

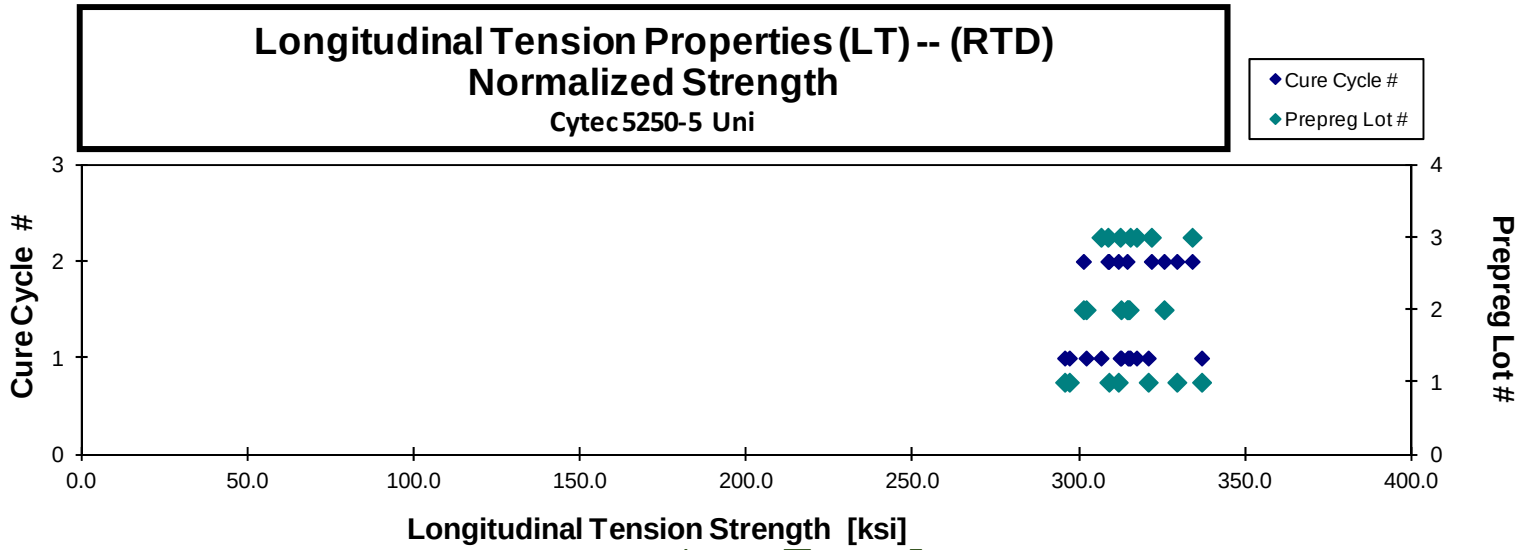

Longitudinal Tension Properties (LT) -- (CTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
Longitudinal Tension Modulus [Msi]

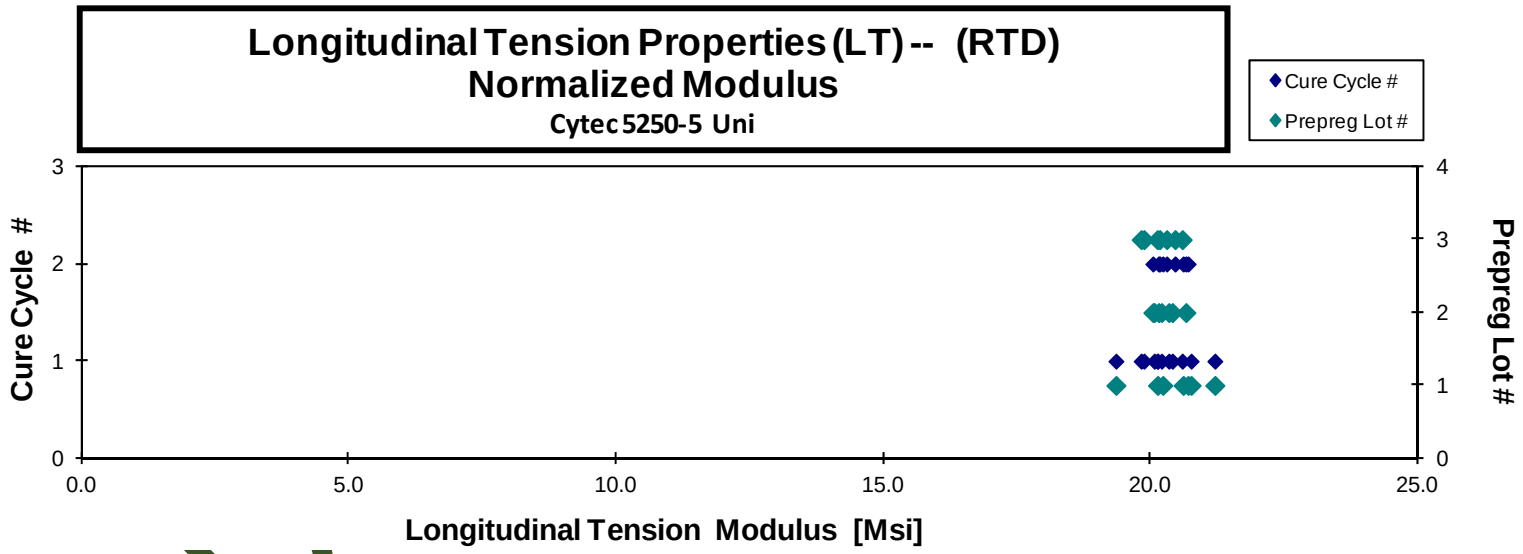
Longidudinal Tension Properties (LT) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAJA111A	A	C1	1	1	311.022	20.267	0.305	0.042	8	XGM	0.0053	297.003	19.353
CNAJA112A	A	C1	1	1	299.228	20.379	0.315	0.043	8	XGM	0.0054	295.601	20.132
CNAJA113A	A	C1	1	1	315.598	20.428	0.302	0.045	8	XGM	0.0056	320.738	20.761
CNAJA114A	A	C1	1	1	327.848	20.641	0.296	0.045	8	XGM	0.0057	336.790	21.204
CNAJA211A	A	C2	1	2	311.133	20.192	0.288	0.044	8	XGM	0.0055	311.723	20.231
CNAJA212A	A	C2	1	2	313.065	20.888	0.296	0.043	8	XGM	0.0054	308.915	20.611
CNAJA213A	A	C2	1	2	330.864	20.798	0.295	0.044	8	XGM	0.0055	329.360	20.704
CNAJB111A	B	C1	2	1	315.183	20.581	0.313	0.044	8	XGM	0.0055	312.557	20.410
CNAJB112A	B	C1	2	1	306.595	20.510	0.304	0.043	8	XGM	0.0054	302.065	20.207
CNAJB113A	B	C1	2	1	322.569	20.578	0.311	0.043	8	XGM	0.0054	314.627	20.072
CNAJB114A	B	C1	2	1	323.221	20.872	0.315	0.043	8	XGM	0.0054	315.018	20.342
CNAJB211A	B	C2	2	2	309.200	20.575	0.300	0.043	8	XGM	0.0054	301.236	20.045
CNAJB212A	B	C2	2	2	321.671	20.619	0.297	0.043	8	XGM	0.0054	314.360	20.150
CNAJB213A	B	C2	2	2	330.141	20.957	0.307	0.043	8	XGM	0.0054	325.514	20.664
CNAJC111A	C	C1	3	1	321.653	20.277	0.302	0.043	8	XGM	0.0054	315.318	19.878
CNAJC112A	C	C1	3	1	301.626	20.263	0.319	0.045	8	XGM	0.0056	306.539	20.593
CNAJC113A	C	C1	3	1	314.693	20.282	0.308	0.044	8	XGM	0.0055	312.309	20.128
CNAJC114A	C	C1	3	1	323.599	20.224	0.292	0.043	8	XGM	0.0054	317.226	19.826
CNAJC211A	C	C2	3	2	332.556	20.089	0.294	0.044	8	XGM/LGM	0.0055	333.942	20.172
CNAJC212A	C	C2	3	2	320.835	20.407	0.309	0.044	8	XGM	0.0055	321.686	20.461
CNAJC213A	C	C2	3	2	309.092	20.333	0.313	0.044	8	XGM	0.0055	308.624	20.303

Average	317.209	20.484	0.304	$Average_{norm}$	0.0055	314.340	20.297
Standard Dev.	9.421	0.249	0.009	$Standard\ Dev._{norm}$		11.078	0.392
Coeff. of Var. [%]	2.970	1.215	2.856	$Coeff.\ of\ Var.\ [\%]_{norm}$		3.524	1.932
Min.	299.228	20.089	0.288	Min.	0.0053	295.601	19.353
Max.	332.556	20.957	0.319	Max.	0.0057	336.790	21.204
Number of Spec.	21	21	21	Number of Spec.		21	21


Longitudinal Tension Properties (LT) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0
Longitudinal Tension Strength [ksi]


Longitudinal Tension Properties (LT) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
5.0
10.0
15.0
20.0
25.0
Longitudinal Tension Modulus [Msi]

Longitudinal Tension Properties (LT) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

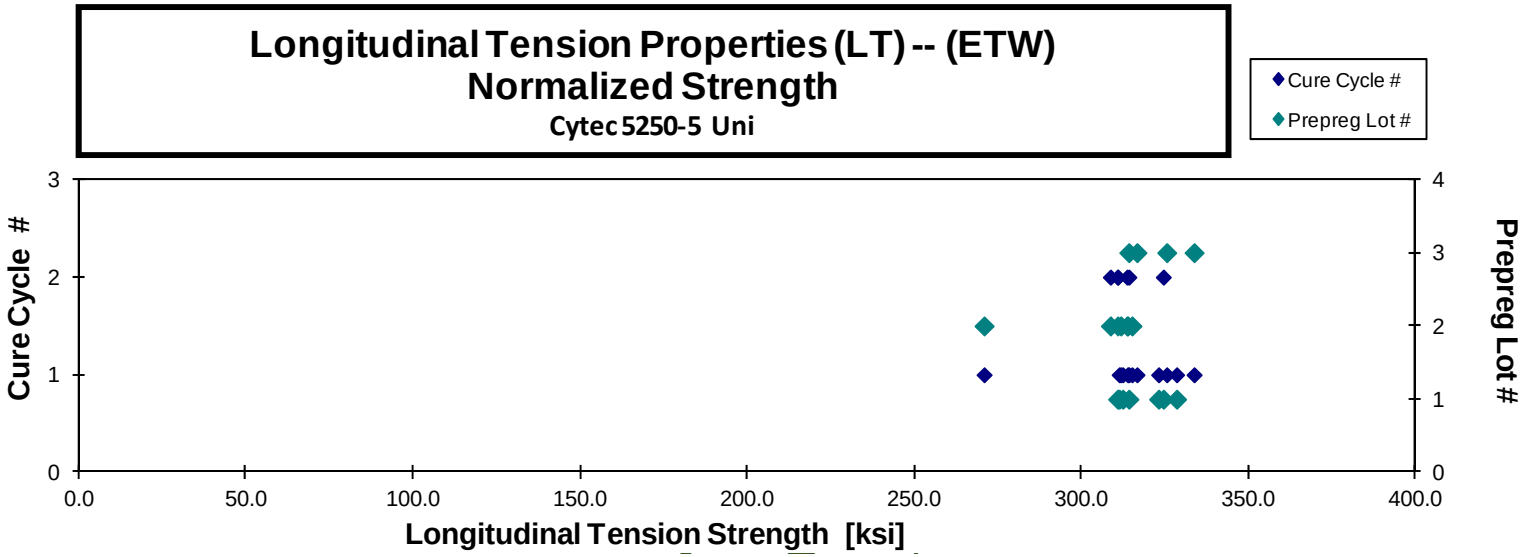
normalizing t_{ply} [in]: 0.0055

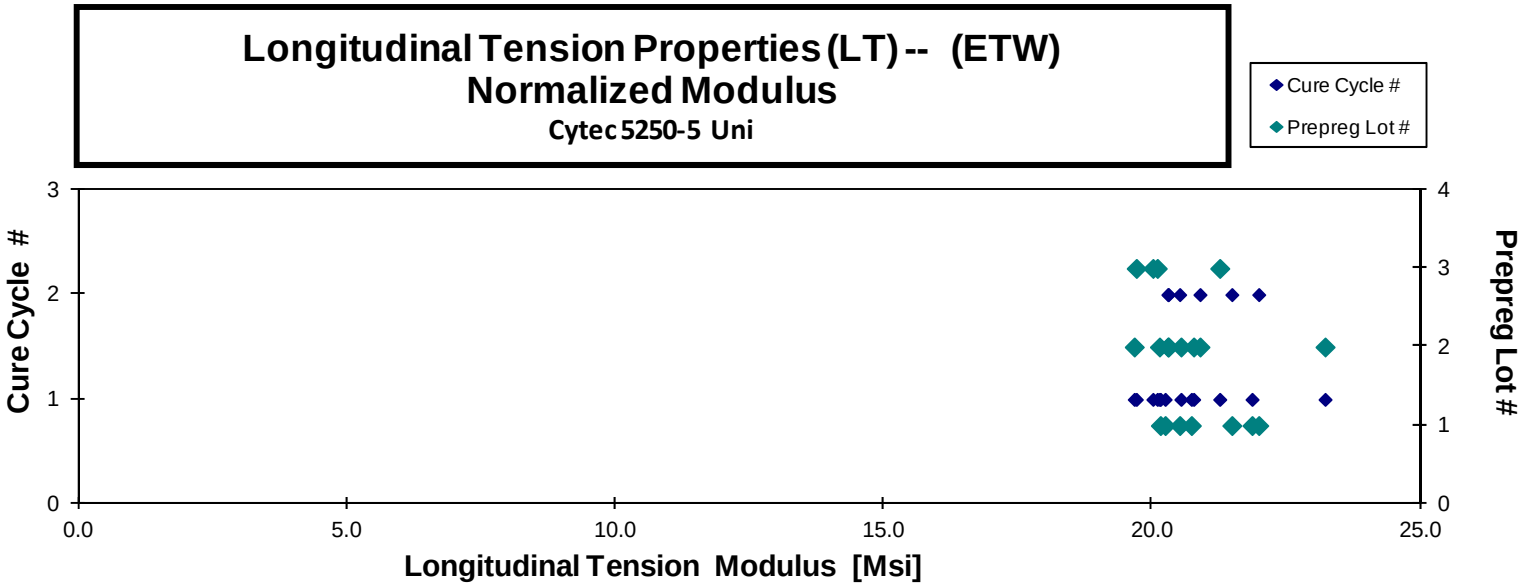
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAJA11BJ	A	C1	1	1	324.022	20.282	0.457	0.044	8	XGM	0.0055	323.163	20.228
CNAJA11CJ	A	C1	1	1	309.262	19.937	0.412	0.044	8	XGM	0.0056	312.425	20.141
CNAJA11DJ	A	C1	1	1	325.585	20.531	0.355	0.044	8	XGM	0.0056	328.545	20.718
CNAJA11EJ	A	C1	1	1	307.408	21.571	0.387	0.045	8	XGM	0.0056	311.367	21.848
CNAJA21BJ	A	C2	1	2	313.776	20.470	0.367	0.044	8	XGM	0.0055	314.252	20.501
CNAJA21EJ*	A	C2	1	2	313.628	22.166		0.044	8	XGM	0.0055	310.896	21.973
CNAJA21FJ*	A	C2	1	2	327.548	21.669		0.044	8	XGM	0.0055	324.570	21.472
CNAJB11BJ	B	C1	2	1	276.465	23.683	0.395	0.043	8	XGM	0.0054	270.915	23.208
CNAJB11CJ	B	C1	2	1	319.707	20.496	0.412	0.043	8	XGM	0.0054	313.894	20.124
CNAJB11DJ	B	C1	2	1	318.490	20.961	0.369	0.043	8	XGM	0.0054	311.854	20.524
CNAJB11EJ	B	C1	2	1	322.639	21.252		0.043	8	XGM	0.0054	315.185	20.761
CNAJB11IJ*	B	C1	2	1		19.851		0.044	8	GAT/XGM	0.0054		19.655
CNAJB219J	B	C2	2	2	316.892	20.817	0.522	0.043	8	XGM	0.0054	308.730	20.281
CNAJB21AJ	B	C2	2	2	318.630	20.794		0.043	8	XGM	0.0054	310.906	20.290
CNAJB21BJ	B	C2	2	2	322.728	21.481	0.447	0.043	8	XGM	0.0053	313.682	20.878
CNAJC11BJ	C	C1	3	1	326.341	19.737	0.355	0.044	8	XGM	0.0055	325.600	19.692
CNAJC11CJ	C	C1	3	1	316.312	19.979	0.296	0.044	8	XGM	0.0055	316.672	20.002
CNAJC11DJ	C	C1	3	1	333.898	21.255	0.271	0.044	8	XGM	0.0055	333.772	21.247
CNAJC11FJ*	C	C1	3	1	315.899	20.190		0.044	8	XGM	0.0055	314.224	20.083

*** coupons were tested with Uniaxial Extensometers. Poisson's ratio is unavailable.**
CNAJC21XJ Specimens took unreasonably long to reach test temperature; thermocouple problem suspected
Poisson's Ratio for CNAJB11EJ and CNAJB21AJ were not reported due to non linear data

Average	317.180	20.901	0.388
Standard Dev.	12.131	0.960	0.066
Coeff. of Var. [%]	3.825	4.595	17.054
Min.	276.465	19.737	0.271
Max.	333.898	23.683	0.522
Number of Spec.	18	19	13

$Average_{norm}$	0.0055	314.481	20.717
$Standard\ Dev._{norm}$		12.958	0.895
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.121	4.319
Min.	0.0053	270.915	19.655
Max.	0.0056	333.772	23.208
Number of Spec.	19	18	19


Longitudinal Tension Properties (LT) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
50.0
100.0
150.0
200.0
250.0
300.0
350.0
400.0
Longitudinal Tension Strength [ksi]


Longitudinal Tension Properties (LT) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
Longitudinal Tension Modulus [Msi]

4.2 Transverse Tension Properties (TT)

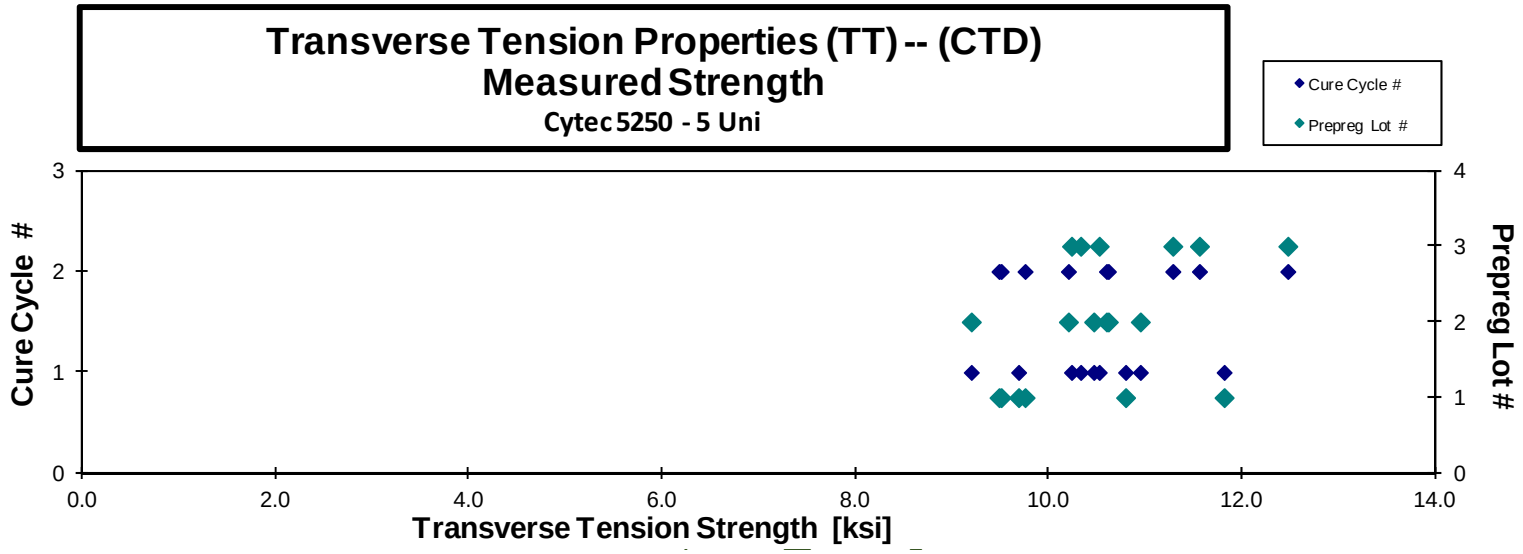
Transverse Tension Properties (TT) -- (CTD)
Strength & Modulus
Cytec 5250 - 5 Uni

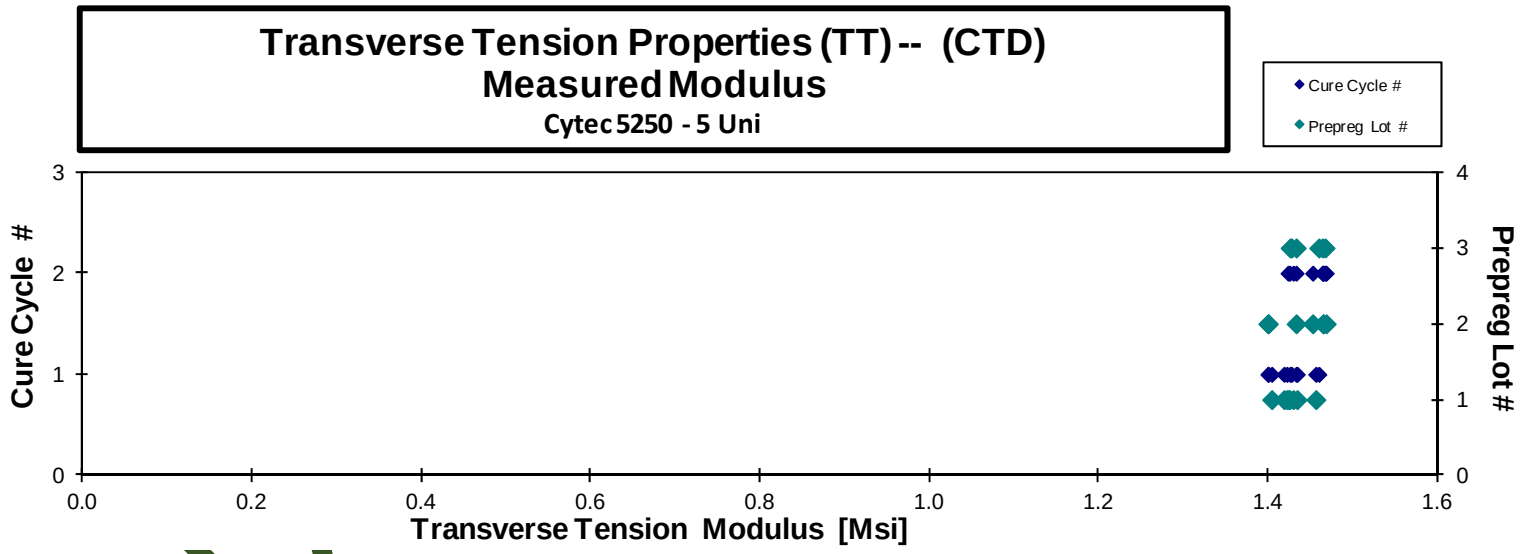
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAUA116B**	A	C1	1	1		1.404		0.088	16	
CNAUA117B	A	C1	1	1	9.689	1.434		0.088	16	LAT / LAB
CNAUA118B**	A	C1	1	1		1.419		0.087	16	
CNAUA119B	A	C1	1	1	10.796	1.422		0.085	16	LAB
CNAUA11AB	A	C1	1	1	11.816	1.456		0.085	16	LAT / LAB
CNAUA216B	A	C2	1	2	9.487	1.425		0.088	16	LAT
CNAUA217B	A	C2	1	2	9.756	1.423		0.087	16	LAB
CNAUA218B	A	C2	1	2	9.509	1.439		0.087	16	LAT
CNAUB116B	B	C1	2	1	10.949	1.400		0.086	16	LAB
CNAUB117B	B	C1	2	1	10.466	1.433		0.085	16	LAT
CNAUB118B	B	C1	2	1	9.199	1.400		0.086	16	LAT
CNAUB216B	B	C2	2	2	10.599	1.465		0.085	16	LAT / LAB
CNAUB217B	B	C2	2	2	10.618	1.465		0.085	16	LAB
CNAUB218B**	B	C2	2	2		1.468		0.084	16	
CNAUB219B	B	C2	2	2	10.205	1.452		0.082	16	LAB
CNAUC119B	C	C1	3	1	10.524	1.460	1.460	0.086	16	LAT
CNAUC11AB	C	C1	3	1	10.331	1.426	1.426	0.086	16	LAB
CNAUC115A*	C	C1	3	1	10.237	1.427	1.427	0.088	16	LAT/LAB
CNAUC214B	C	C2	3	2	12.476	1.467	1.467	0.086	16	LAT/LAB
CNAUC215B	C	C2	3	2	11.561	1.433	1.433	0.086	16	LAT
CNAUC216B	C	C2	3	2	11.285	1.464	1.464	0.087	16	LAT/LAB

****Strength not reported due to bad failure mode**

*** Specimen CNAUC115A is removed from RTD (CNAUC X1XA) and tested as CTD (CNAUC X1XB)**

Average	**10.528**	**1.437**	**1.446**
Standard Dev.	**0.867**	**0.023**	**0.019**
Coeff. of Var. [%]	**8.234**	**1.582**	**1.341**
Min.	**9.199**	**1.400**	**1.426**
Max.	**12.476**	**1.468**	**1.467**
Number of Spec.	**18**	**21**	**6**

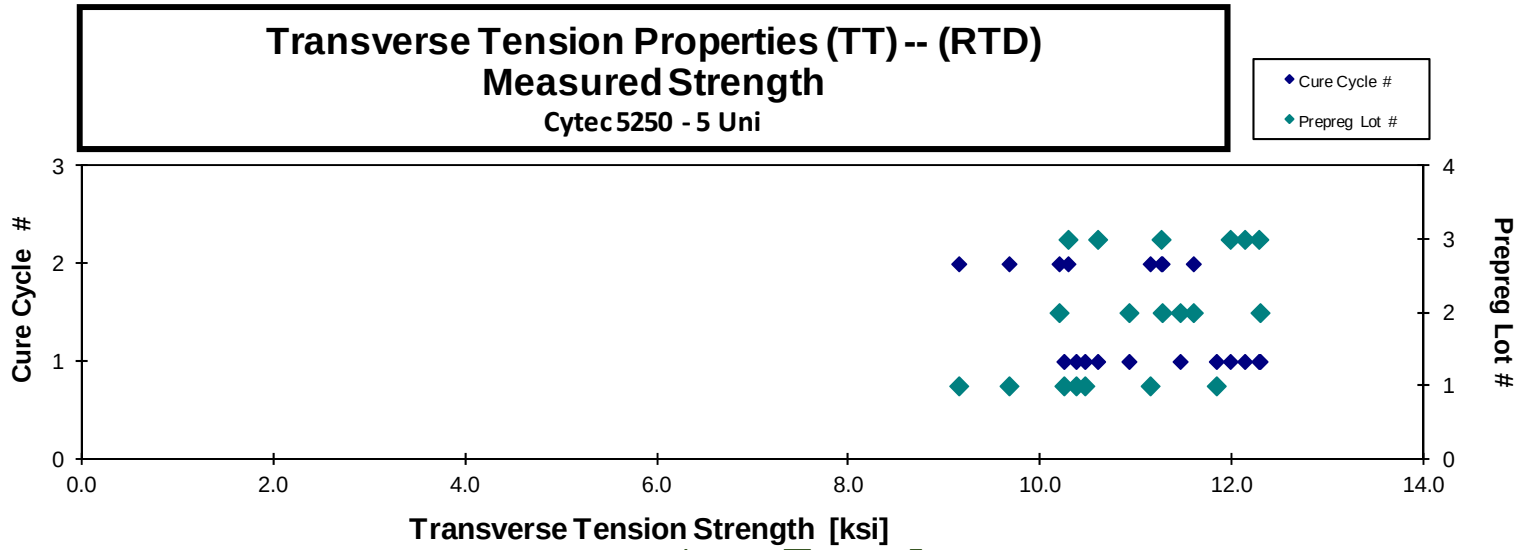

Transverse Tension Properties (TT) -- (CTD)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Strength [ksi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0

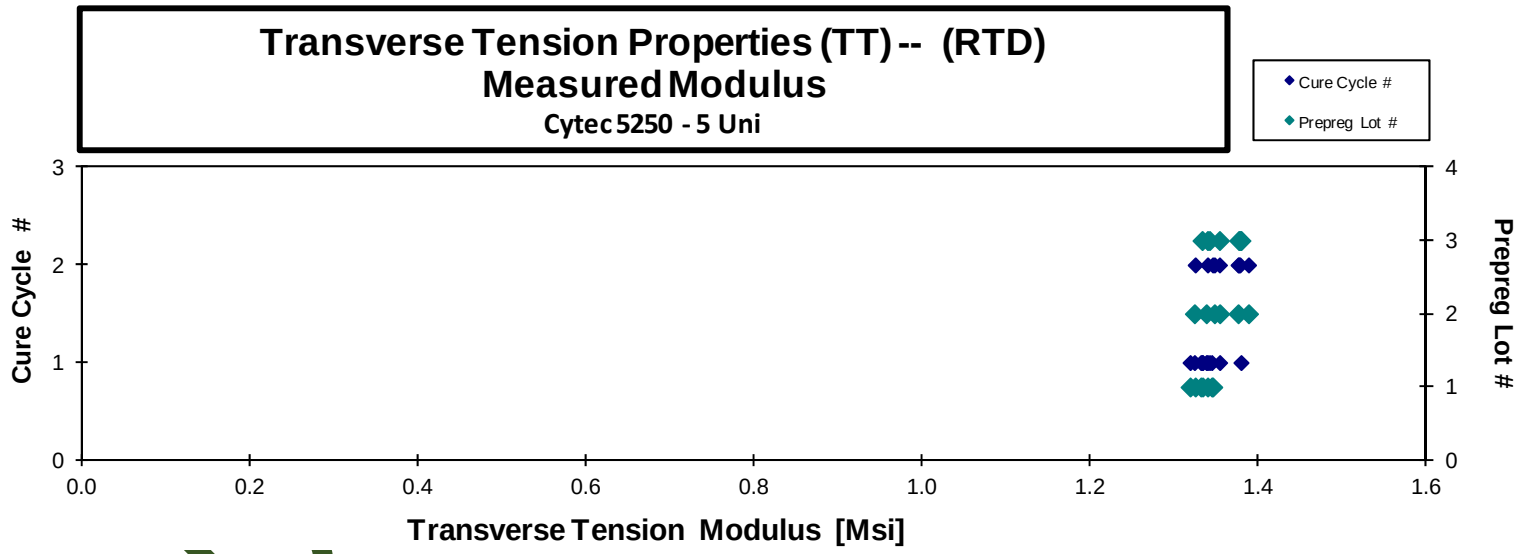

Transverse Tension Properties (TT) -- (CTD)
Measured Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Modulus [Msi]
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6

Transverse Tension Properties (TT) -- (RTD)
Strength & Modulus
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAUA111A	A	C1	1	1	10.367	1.344	0.086	16	LWB / LGM
CNAUA112A	A	C1	1	1	11.831	1.333	0.086	16	LGM
CNAUA113A	A	C1	1	1	10.460	1.331	0.086	16	LGM
CNAUA114A	A	C1	1	1	10.242	1.318	0.087	16	LAT
CNAUA211A	A	C2	1	2	9.669	1.345	0.086	16	LAT / LAB
CNAUA212A	A	C2	1	2	11.141	1.339	0.086	16	LGM
CNAUA213A	A	C2	1	2	9.145	1.324	0.086	16	LAT / LWB
CNAUB111A	B	C1	2	1	10.920	1.354	0.083	16	LGM
CNAUB112A	B	C1	2	1	11.454	1.338	0.084	16	LAT / LAB
CNAUB113A	B	C1	2	1	12.287	1.324	0.085	16	LAT / LAB
CNAUB212A	B	C2	2	2	11.591	1.388	0.083	16	LAT / LAB
CNAUB213A	B	C2	2	2	10.191	1.376	0.084	16	LAT / LAB
CNAUB214A	B	C2	2	2	11.266	1.347	0.084	16	LAT / LAB
CNAUC111A	C	C1	3	1	10.594	1.379	0.085	16	LAT/LAB
CNAUC112A	C	C1	3	1	11.976	1.342	0.085	16	LAT/LAB
CNAUC113A	C	C1	3	1	12.275	1.333	0.086	16	LGM
CNAUC114A	C	C1	3	1	12.127	1.339	0.087	16	LAT/LAB
CNAUC211A	C	C2	3	2		1.378	0.084	16	LWB
CNAUC212A	C	C2	3	2	10.284	1.353	0.085	16	LWB
CNAUC213A	C	C2	3	2	11.255	1.376	0.086	16	LWB

Average	**11.004**	**1.348**
Standard Dev.	**0.904**	**0.021**
Coeff. of Var. [%]	**8.220**	**1.536**
Min.	**9.145**	**1.318**
Max.	**12.287**	**1.388**
Number of Spec.	**19**	**20**

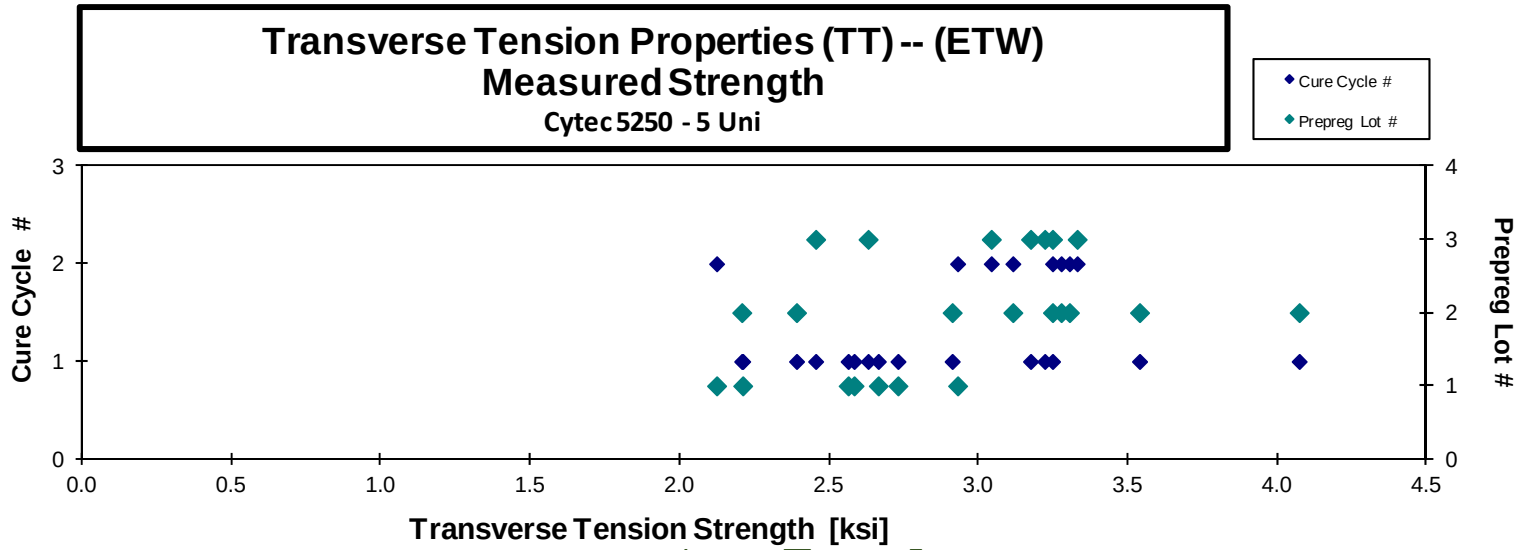

Transverse Tension Properties (TT) -- (RTD)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Strength [ksi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0

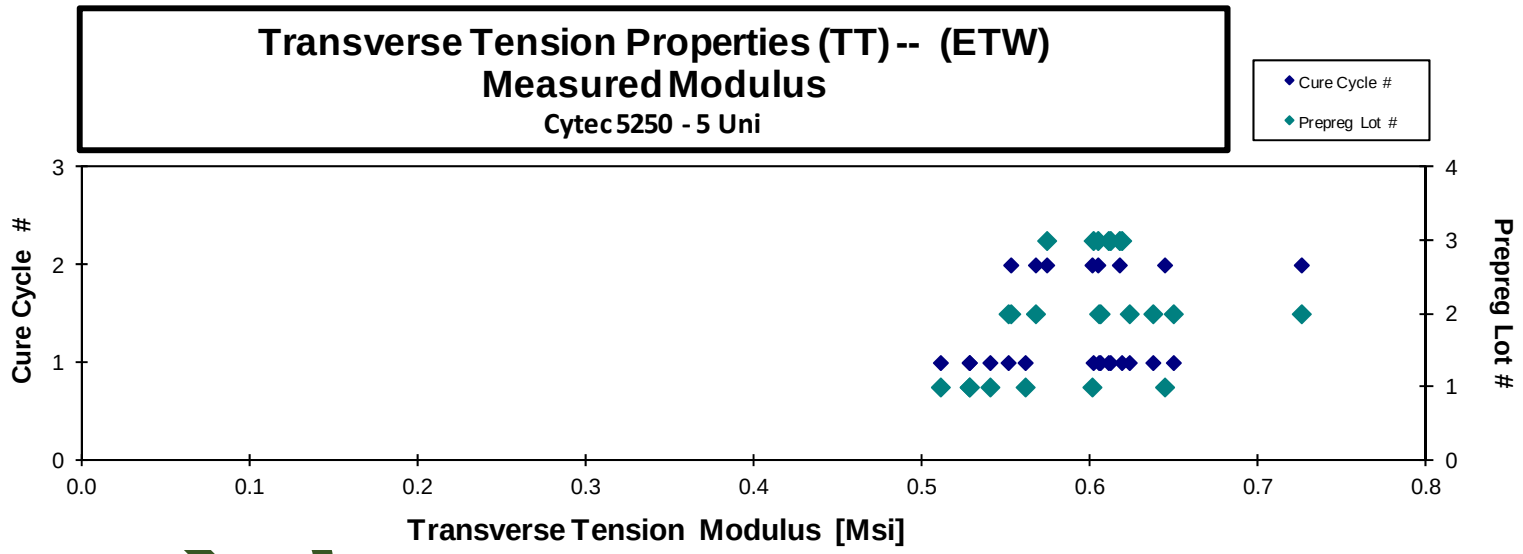

Transverse Tension Properties (TT) -- (RTD)
Measured Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Modulus [Msi]
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6

Transverse Tension Properties (TT) -- (ETW)
Strength & Modulus
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAUA11BJ	A	C1	1	1	2.730	0.540	0.085	16	LGM
CNAUA11DJ	A	C1	1	1	2.665	0.511	0.087	16	LWT
CNAUA11EJ	A	C1	1	1	2.564	0.528	0.087	16	LGM
CNAUA11FJ	A	C1	1	1	2.584	0.528	0.086	16	LGM
CNAUA11GJ	A	C1	1	1	2.211	0.561	0.086	16	LGM
CNAUA21FJ	A	C2	1	2	2.930	0.644	0.086	16	LGM
CNAUA21GJ	A	C2	1	2	2.123	0.601	0.086	16	LWB
CNAUB11BJ	B	C1	2	1	4.073	0.649	0.086	16	LWT
CNAUB11CJ	B	C1	2	1	3.539	0.623	0.087	16	LGM
CNAUB11DJ	B	C1	2	1	3.248	0.605	0.087	16	LGM
CNAUB11EJ	B	C1	2	1	2.208	0.551	0.087	16	LGM
CNAUB11FJ	B	C1	2	1	2.391	0.606	0.087	16	LGM
CNAUB11GJ	B	C1	2	1	2.912	0.637	0.087	16	LGM
CNAUB21BJ	B	C2	2	2	3.277	0.725	0.083	16	LWB
CNAUB21FJ	B	C2	2	2	3.115	0.567	0.083	16	LGM
CNAUB21GJ	B	C2	2	2	3.304	0.552	0.083	16	LGM
CNAUC11BJ	C	C1	3	1	2.455	0.611	0.086	16	LGM
CNAUC11CJ	C	C1	3	1	3.222	0.602	0.087	16	LGM
CNAUC11DJ	C	C1	3	1	3.174	0.618	0.087	16	LGM
CNAUC11EJ	C	C1	3	1	2.630	0.612	0.087	16	LWB
CNAUC218J	C	C2	3	2	3.248	0.604	0.087	16	LWT
CNAUC219J	C	C2	3	2	3.043	0.574	0.086	16	LGM
CNAUC21AJ	C	C2	3	2	3.330	0.617	0.085	16	LGM

Average	**2.912**	**0.594**
Standard Dev.	**0.484**	**0.049**
Coeff. of Var. [%]	**16.605**	**8.190**
Min.	**2.123**	**0.511**
Max.	**4.073**	**0.725**
Number of Spec.	**23**	**23**


Transverse Tension Properties (TT) -- (ETW)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Strength [ksi]
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5


Transverse Tension Properties (TT) -- (ETW)
Measured Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Transverse Tension Modulus [Msi]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8

4.3 Longitudinal Compression Properties (LC)

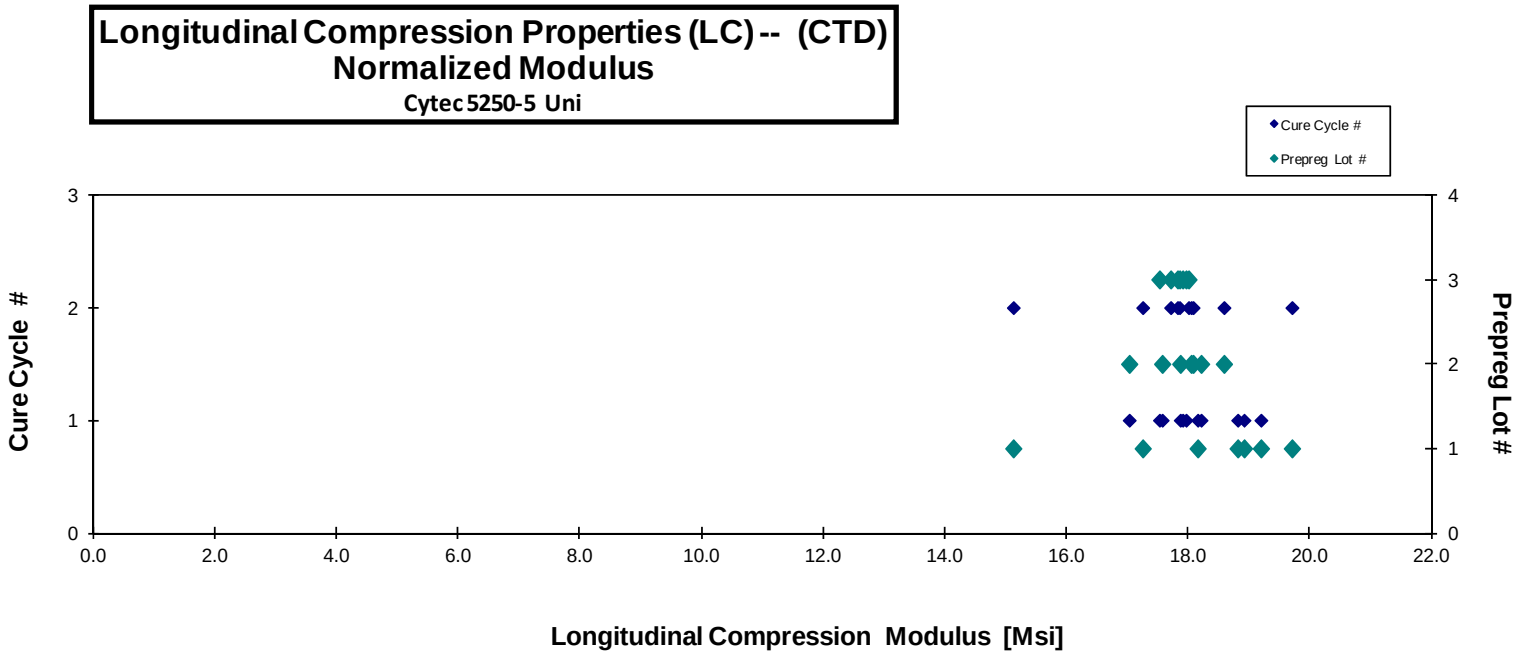
Longitudinal Compression Properties (LC) -- (CTD)
Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Modulus_{norm}$ [Msi]
CNALA115B	A	C1	1	1	19.265	0.110	20		0.0055	19.195
CNALA116B	A	C1	1	1	18.105	0.110	20		0.0055	18.154
CNALA117B	A	C1	1	1	18.846	0.110	20		0.0055	18.917
CNALA118B	A	C1	1	1	18.736	0.110	20		0.0055	18.813
CNALA215B	A	C2	1	2	20.213	0.107	20		0.0054	19.705
CNALA216B	A	C2	1	2	17.669	0.107	20		0.0054	17.251
CNALA217B	A	C2	1	2	15.396	0.108	20		0.0054	15.123
CNALB115B	B	C1	2	1	17.834	0.108	20		0.0054	17.572
CNALB116B	B	C1	2	1	17.230	0.109	20		0.0054	17.029
CNALB117B	B	C1	2	1	17.953	0.109	20		0.0055	17.869
CNALB118B	B	C1	2	1	18.208	0.110	20		0.0055	18.211
CNALB215B	B	C2	2	2	18.592	0.110	20		0.0055	18.586
CNALB216B	B	C2	2	2	18.085	0.110	20		0.0055	18.079
CNALB217B	B	C2	2	2	18.061	0.110	20		0.0055	18.047
CNALC115B	C	C1	3	1	18.069	0.109	20		0.0055	17.908
CNALC116B	C	C1	3	1	17.641	0.109	20		0.0055	17.526
CNALC117B	C	C1	3	1	18.131	0.109	20		0.0054	17.963
CNALC215B	C	C2	3	2	17.883	0.109	20		0.0054	17.710
CNALC216B	C	C2	3	2	17.982	0.109	20		0.0055	17.824
CNALC217B	C	C2	3	2	18.010	0.109	20		0.0055	17.857
CNALC218B	C	C2	3	2	18.172	0.109	20		0.0054	18.004

No failure mode reported because coupons were not tested to failure

Average	**18.099**	**$Average_{norm}$**	**0.0055**	**17.969**
Standard Dev.	**0.885**	**Standard $Dev._{norm}$**		**0.911**
Coeff. of Var. [%]	**4.891**	**Coeff. of Var. $[\%]_{norm}$**		**5.068**
Min.	**15.396**	**Min.**	**0.0054**	**15.123**
Max.	**20.213**	**Max.**	**0.0055**	**19.705**
Number of Spec.	**21**	**Number of Spec.**		**21**


Longitudinal Compression Properties (LC) -- (CTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0
Longitudinal Compression Modulus [Msi]

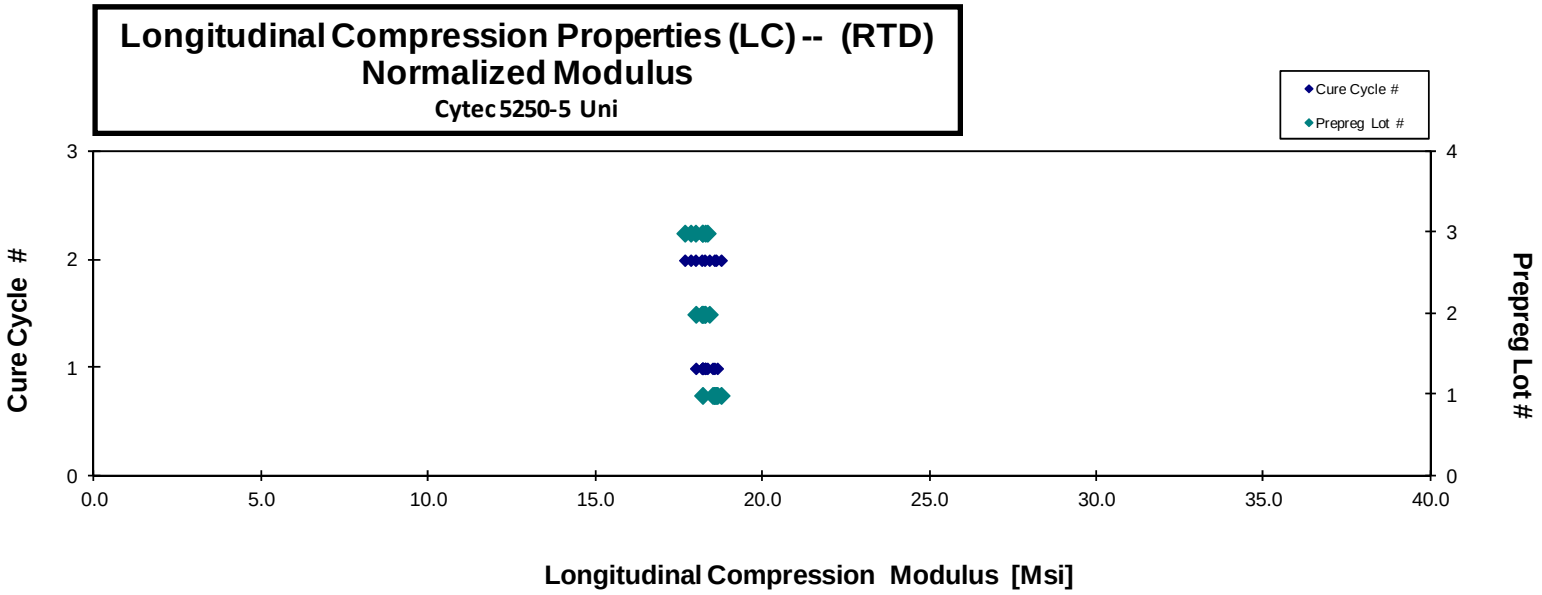
Longitudinal Compression Properties (LC) -- (RTD) Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Modulus_{norm}$ [Msi]
CNALA111A	A	C1	1	1	18.807	0.106	20		0.0053	18.183
CNALA112A	A	C1	1	1	18.869	0.108	20		0.0054	18.483
CNALA113A	A	C1	1	1	18.867	0.109	20		0.0054	18.624
CNALA114A	A	C1	1	1	18.693	0.109	20		0.0055	18.537
CNALA212A	A	C2	1	2	19.099	0.107	20		0.0053	18.537
CNALA213A	A	C2	1	2	19.346	0.107	20		0.0053	18.739
CNALA214A	A	C2	1	2	19.065	0.107	20		0.0054	18.585
CNALB111A	B	C1	2	1	18.021	0.111	20		0.0055	18.172
CNALB112A	B	C1	2	1	18.254	0.110	20		0.0055	18.260
CNALB113A	B	C1	2	1	18.332	0.109	20		0.0055	18.196
CNALB114A	B	C1	2	1	18.181	0.109	20		0.0054	17.980
CNALB211A	B	C2	2	2	18.289	0.111	20		0.0055	18.386
CNALB212A	B	C2	2	2	18.117	0.110	20		0.0055	18.158
CNALB213A	B	C2	2	2	18.231	0.110	20		0.0055	18.245
CNALC111A	C	C1	3	1	18.606	0.108	20		0.0054	18.262
CNALC112A	C	C1	3	1	18.541	0.109	20		0.0054	18.324
CNALC113A	C	C1	3	1	18.384	0.109	20		0.0054	18.178
CNALC114A	C	C1	3	1	18.366	0.109	20		0.0054	18.177
CNALC211A	C	C2	3	2	17.870	0.109	20		0.0054	17.651
CNALC212A	C	C2	3	2	18.017	0.109	20		0.0054	17.829
CNALC213A	C	C2	3	2	18.139	0.109	20		0.0054	17.971

No failure mode reported because coupons were not tested to failure

	Modulus	$Modulus_{norm}$	Avg. t_{ply} [in]
Average	18.481	18.261	0.0054
Standard Dev.	0.405	0.270	
Coeff. of Var. [%]	2.190	1.476	
Min.	17.870	17.651	0.0053
Max.	19.346	18.739	0.0055
Number of Spec.	21	21	


Longitudinal Compression Properties (LC) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Longitudinal Compression Modulus [Msi]
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
0
1
2
3
4

Longitudinal Compression Properties (LC) -- (ETD) Modulus

Cytec 5250-5 Uni

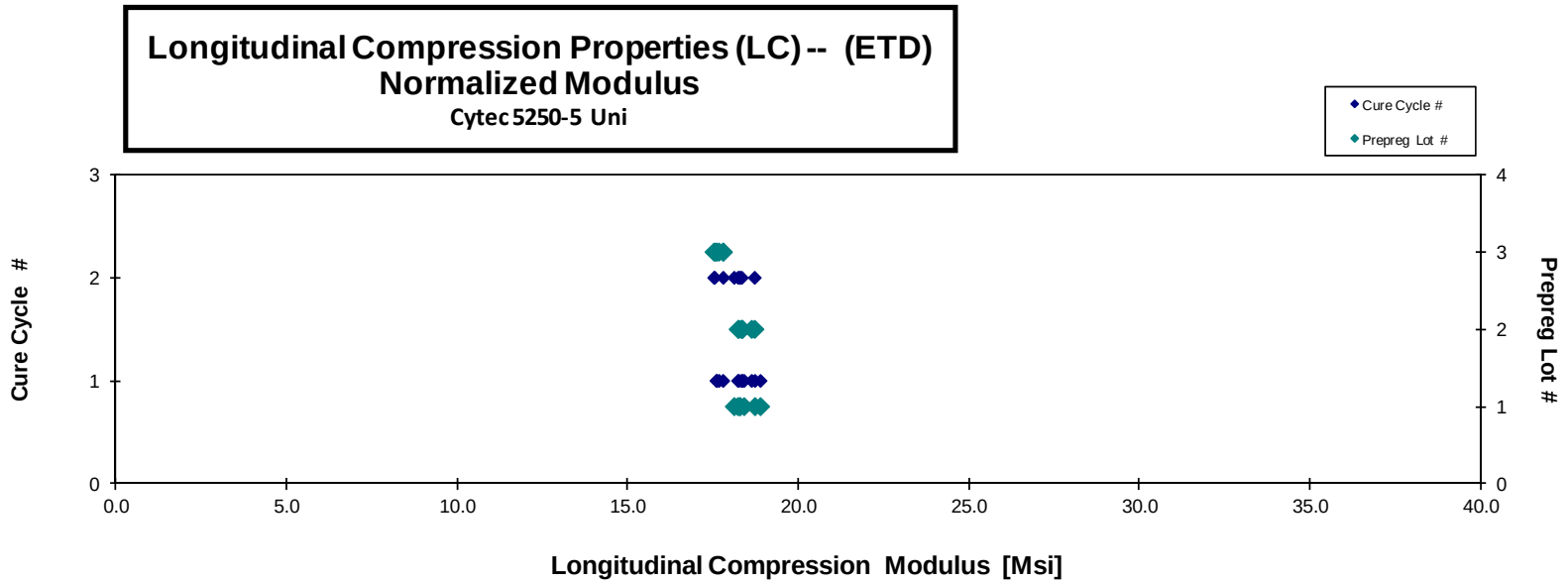
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Modulus_{norm}$ [Msi]
CNALA119K	A	C1	1	1	18.594	0.111	20		0.0055	18.732
CNALA11AK	A	C1	1	1	18.760	0.111	20		0.0055	18.891
CNALA11BK	A	C1	1	1	18.771	0.107	20		0.0053	18.233
CNALA11CK	A	C1	1	1	18.719	0.108	20		0.0054	18.413
CNALA219K	A	C2	1	2	18.672	0.108	20		0.0054	18.299
CNALA21AK	A	C2	1	2	18.648	0.108	20		0.0054	18.281
CNALA21BK	A	C2	1	2	18.558	0.107	20		0.0054	18.122
CNALB119K	B	C1	2	1	18.213	0.111	20		0.0055	18.334
CNALB11AK	B	C1	2	1	18.412	0.111	20		0.0056	18.635
CNALB11BK	B	C1	2	1	18.228	0.111	20		0.0055	18.363
CNALB11CK	B	C1	2	1	18.237	0.110	20		0.0055	18.259
CNALB219K	B	C2	2	2	18.303	0.110	20		0.0055	18.347
CNALB21AK	B	C2	2	2	18.669	0.110	20		0.0055	18.723
CNALB21BK	B	C2	2	2	18.141	0.111	20		0.0055	18.237
CNALC119K	C	C1	3	1	17.929	0.109	20		0.0055	17.796
CNALC11AK	C	C1	3	1	17.821	0.109	20		0.0055	17.678
CNALC11BK	C	C1	3	1	17.753	0.109	20		0.0055	17.603
CNALC11CK	C	C1	3	1	17.801	0.109	20		0.0054	17.612
CNALC219K	C	C2	3	2	17.920	0.109	20		0.0055	17.801
CNALC21AK	C	C2	3	2	17.649	0.109	20		0.0055	17.553
CNALC21BK	C	C2	3	2	17.681	0.109	20		0.0055	17.531

No failure mode reported because coupons were not tested to failure

	Modulus	$Modulus_{norm}$
Average	18.261	18.164
Standard Dev.	0.390	0.418
Coeff. of Var. [%]	2.137	2.303
Min.	17.649	17.531
Max.	18.771	18.891
Number of Spec.	21	21

	t_{ply}	$Modulus_{norm}$
$Average_{norm}$	0.0055	18.164
$Standard\ Dev._{norm}$		0.418
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.303
Min.	0.0053	17.531
Max.	0.0056	18.891
Number of Spec.		21


Longitudinal Compression Properties (LC) -- (ETD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Longitudinal Compression Modulus [Msi]
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
0
1
2
3
4

Longitudinal Compression Properties (LC) -- (ETW) Modulus

Cytec 5250-5 Uni

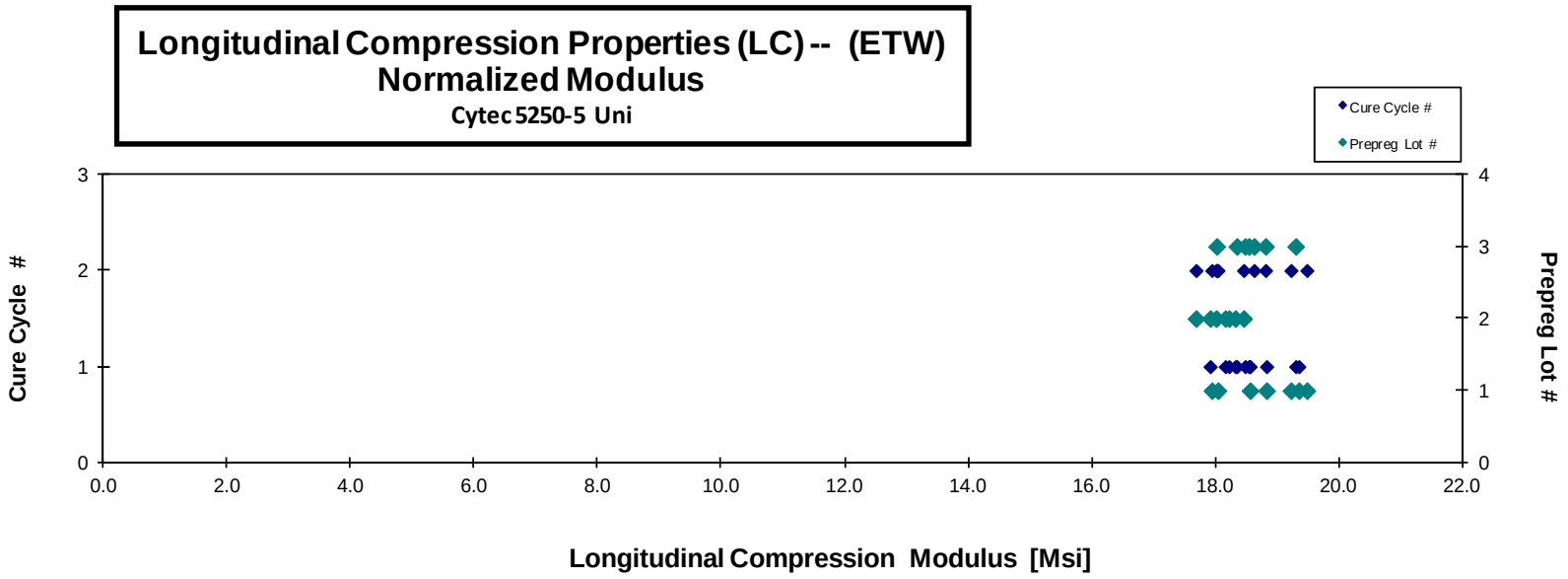
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Modulus_{norm}$ [Msi]
CNALA11DJ	A	C1	1	1	19.573	0.109	20		0.0054	19.353
CNALA11EJ	A	C1	1	1	18.944	0.109	20		0.0055	18.832
CNALA11FJ	A	C1	1	1	18.603	0.110	20		0.0055	18.564
CNALA11GJ	A	C1	1	2	17.941	0.111	20		0.0055	18.044
CNALA21DJ	A	C2	1	2	18.527	0.107	20		0.0053	17.946
CNALA21EJ	A	C2	1	2	19.920	0.106	20		0.0053	19.226
CNALA21FJ	A	C2	1	2	20.133	0.106	20		0.0053	19.484
CNALB11DJ	B	C1	2	1	18.349	0.109	20		0.0055	18.221
CNALB11EJ	B	C1	2	1	18.357	0.109	20		0.0054	18.163
CNALB11FJ	B	C1	2	1	18.546	0.109	20		0.0054	18.324
CNALB11GJ	B	C1	2	1	18.038	0.109	20		0.0055	17.918
CNALB21DJ	B	C2	2	2	17.966	0.110	20		0.0055	18.015
CNALB21EJ	B	C2	2	2	18.451	0.110	20		0.0055	18.459
CNALB21FJ	B	C2	2	2	17.737	0.110	20		0.0055	17.688
CNALC11DJ	C	C1	3	1	18.781	0.109	20		0.0054	18.544
CNALC11EJ	C	C1	3	1	18.629	0.109	20		0.0055	18.482
CNALC11FJ	C	C1	3	1	18.498	0.109	20		0.0055	18.349
CNALC11GJ	C	C1	3	1	19.497	0.109	20		0.0054	19.302
CNALC21DJ	C	C2	3	2	18.080	0.110	20		0.0055	18.023
CNALC21EJ	C	C2	3	2	18.734	0.109	20		0.0055	18.629
CNALC21FJ	C	C2	3	2	18.944	0.109	20		0.0055	18.815

No failure mode reported because coupons were not tested to failure

Average	**18.678**	
Standard Dev.	**0.646**	
Coeff. of Var. [%]	**3.456**	
Min.	**17.737**	
Max.	**20.133**	
Number of Spec.	**21**	

$Average_{norm}$	**0.0054**	**18.494**
$Standard\ Dev._{norm}$		**0.516**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**2.789**
Min.	**0.0053**	**17.688**
Max.	**0.0055**	**19.484**
Number of Spec.		**21**


Longitudinal Compression Properties (LC) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Longitudinal Compression Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0

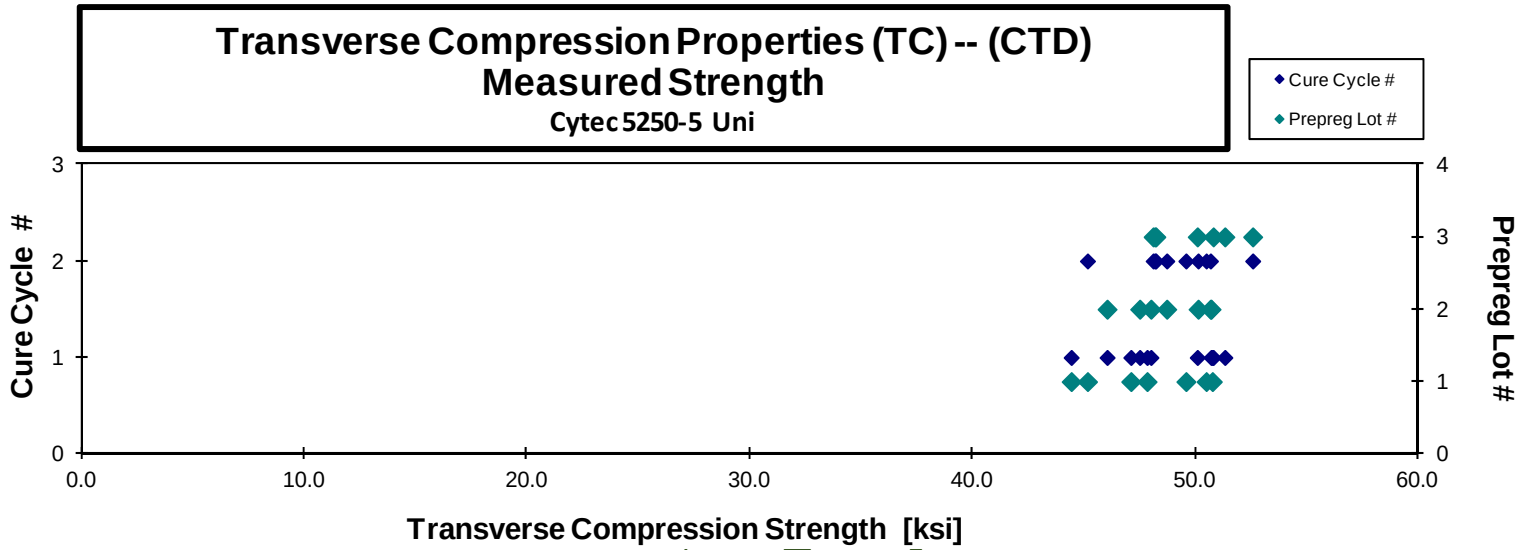
4.4 Transverse Compression Properties (TC)

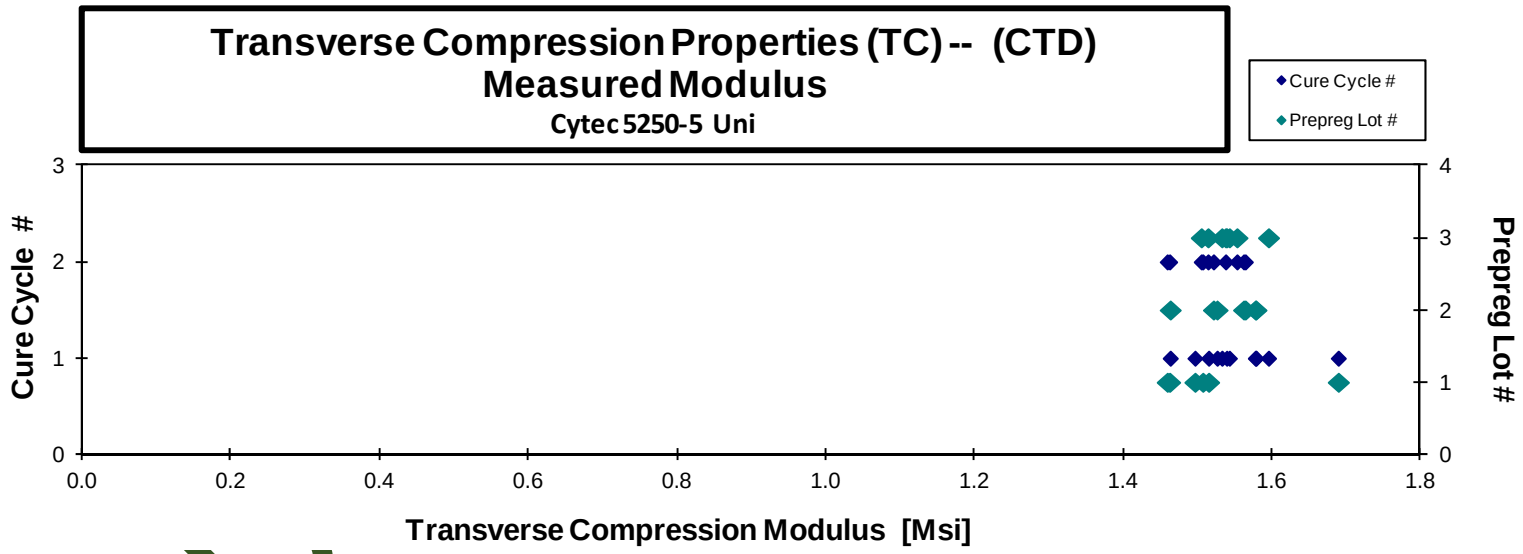
Transverse Compression Properties (TC) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAZA117B	A	C1	1	1	47.117	1.497	0.110	20	HAT
CNAZA118B	A	C1	1	1	50.776	1.690	0.110	20	HGM
CNAZA119B	A	C1	1	1	44.437	1.515	0.110	20	HGM
CNAZA11AB*	A	C1	1	1	47.846		0.110	20	HGM
CNAZA215B	A	C2	1	2	49.590	1.460	0.107	20	HGM
CNAZA216B	A	C2	1	2	50.501	1.463	0.107	20	HGM
CNAZA217B	A	C2	1	2	45.169	1.508	0.107	20	HGM
CNAZB116B	B	C1	2	1	46.051	1.464	0.111	20	HGM
CNAZB117B	B	C1	2	1	47.514	1.527	0.111	20	HGM
CNAZB118B	B	C1	2	1	50.721	1.578	0.111	20	HGM
CNAZB119B	B	C1	2	1	48.018	1.579	0.107	20	HGM
CNAZB215B	B	C2	2	2	48.729	1.522	0.108	20	HGM
CNAZB216B	B	C2	2	2	50.137	1.563	0.109	20	HGM
CNAZB217B	B	C2	2	2	50.691	1.565	0.109	20	HGM
CNAZC115B**	C	C1	3	1		1.540	0.109	20	HIT
CNAZC116B	C	C1	3	1	51.338	1.533	0.109	20	HGM
CNAZC117B	C	C1	3	1	50.102	1.543	0.109	20	HGM
CNAZC118B	C	C1	3	1	50.818	1.596	0.109	20	HGM
CNAZC215B	C	C2	3	2	48.237	1.538	0.110	20	HGM
CNAZC216B	C	C2	3	2	48.200	1.515	0.111	20	HGM
CNAZC217B	C	C2	3	2	48.120	1.506	0.111	20	HGM
CNAZC218B	C	C2	3	2	52.590	1.554	0.112	20	HGM

***Compressive modulus not reported due to non-linearity**
****Compressive strength not reported due to unacceptable failure mode observed.**

Average	**48.891**	**1.536**
Standard Dev.	**2.119**	**0.052**
Coeff. of Var. [%]	**4.334**	**3.370**
Min.	**44.437**	**1.460**
Max.	**52.590**	**1.690**
Number of Spec.	**21**	**21**


Transverse Compression Properties (TC) -- (CTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
Transverse Compression Strength [ksi]

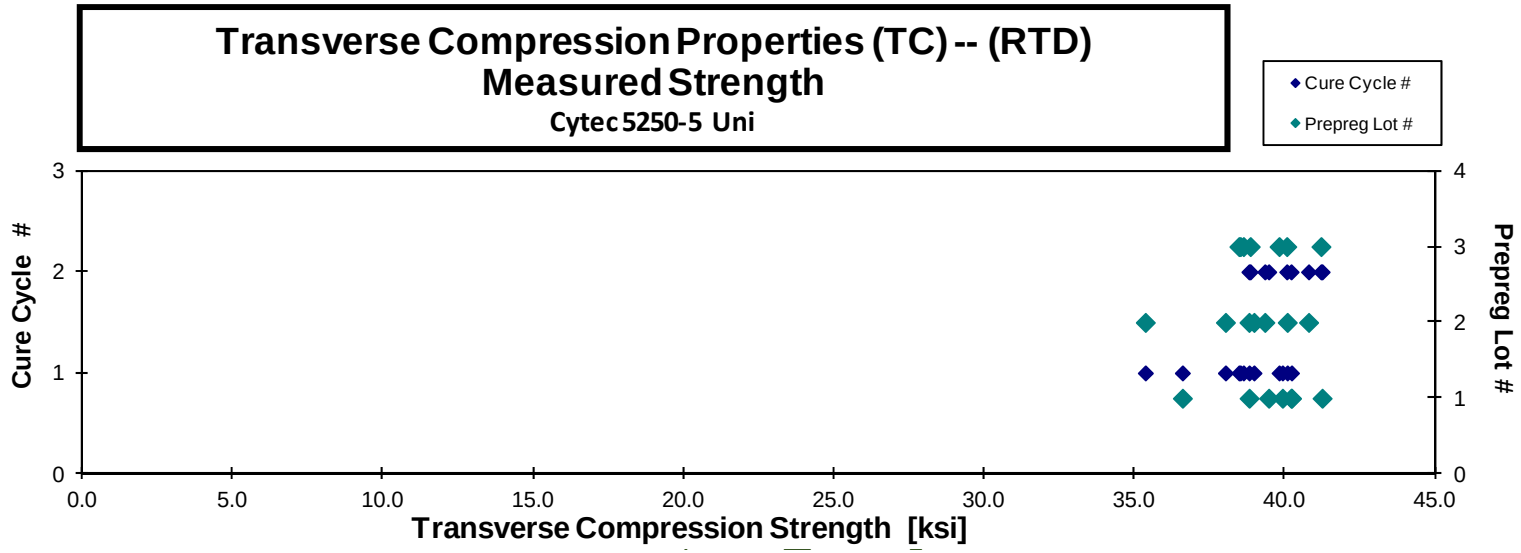

Transverse Compression Properties (TC) -- (CTD)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Transverse Compression Modulus [Msi]

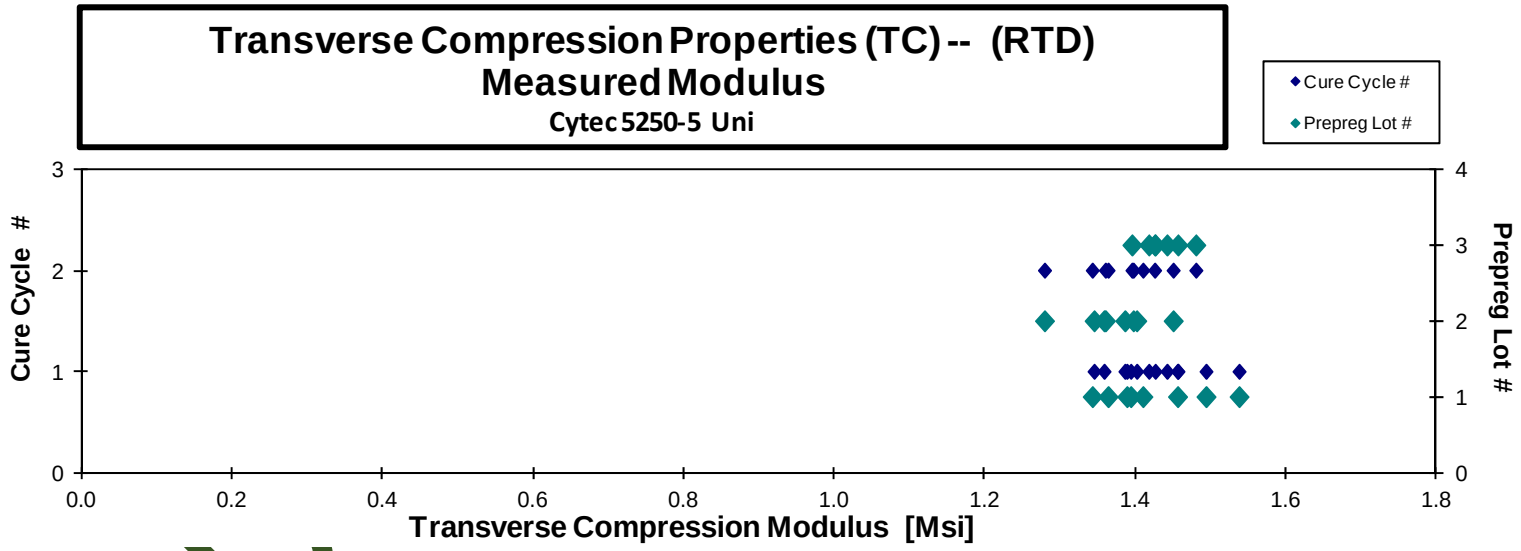
Transverse Compression Properties (TC) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAZA112A*	A	C1	1	1		1.536	0.108	20	HAT / HIB
CNAZA113A	A	C1	1	1	39.919	1.492	0.109	20	HGM
CNAZA114A	A	C1	1	1	36.592	1.387	0.109	20	HGM
CNAZA115A	A	C1	1	1	38.812	1.392	0.109	20	HGM
CNAZA116A	A	C1	1	1	40.221	1.455	0.110	20	HGM
CNAZA211A	A	C2	1	2	41.241	1.408	0.105	20	HGM
CNAZA212A	A	C2	1	2	39.463	1.362	0.106	20	HGM / HAT
CNAZA213A	A	C2	1	2	40.208	1.341	0.106	20	HGM
CNAZB111A	B	C1	2	1	35.360	1.344	0.108	20	HGM
CNAZB112A	B	C1	2	1	40.081	1.400	0.109	20	HGM
CNAZB113A	B	C1	2	1	38.973	1.357	0.110	20	HGM
CNAZB115A	B	C1	2	1	38.024	1.385	0.111	20	HGM
CNAZB211A	B	C2	2	2	39.334	1.278	0.106	20	HGM
CNAZB212A*	B	C2	2	2		1.396	0.107	20	HGM / HIB
CNAZB213A	B	C2	2	2	38.808	1.359	0.107	20	HGM
CNAZB214A	B	C2	2	2	40.791	1.449	0.108	20	HGM
CNAZC111A	C	C1	3	1	38.474	1.425	0.106	20	HGM
CNAZC112A	C	C1	3	1	39.809	1.455	0.107	20	HGM / HAT
CNAZC113A	C	C1	3	1	38.620	1.440	0.108	20	HGM
CNAZC114A	C	C1	3	1	38.519	1.416	0.109	20	HGM
CNAZC211A	C	C2	3	2	38.848	1.479	0.106	20	HGM
CNAZC212A	C	C2	3	2	41.202	1.424	0.107	20	HGM
CNAZC213A	C	C2	3	2	40.065	1.394	0.108	20	HGM

***Compressive strength not reported due to unacceptable failure mode observed.**

Average	**39.208**	**1.408**
Standard Dev.	**1.414**	**0.057**
Coeff. of Var. [%]	**3.607**	**4.024**
Min.	**35.360**	**1.278**
Max.	**41.241**	**1.536**
Number of Spec.	**21**	**23**

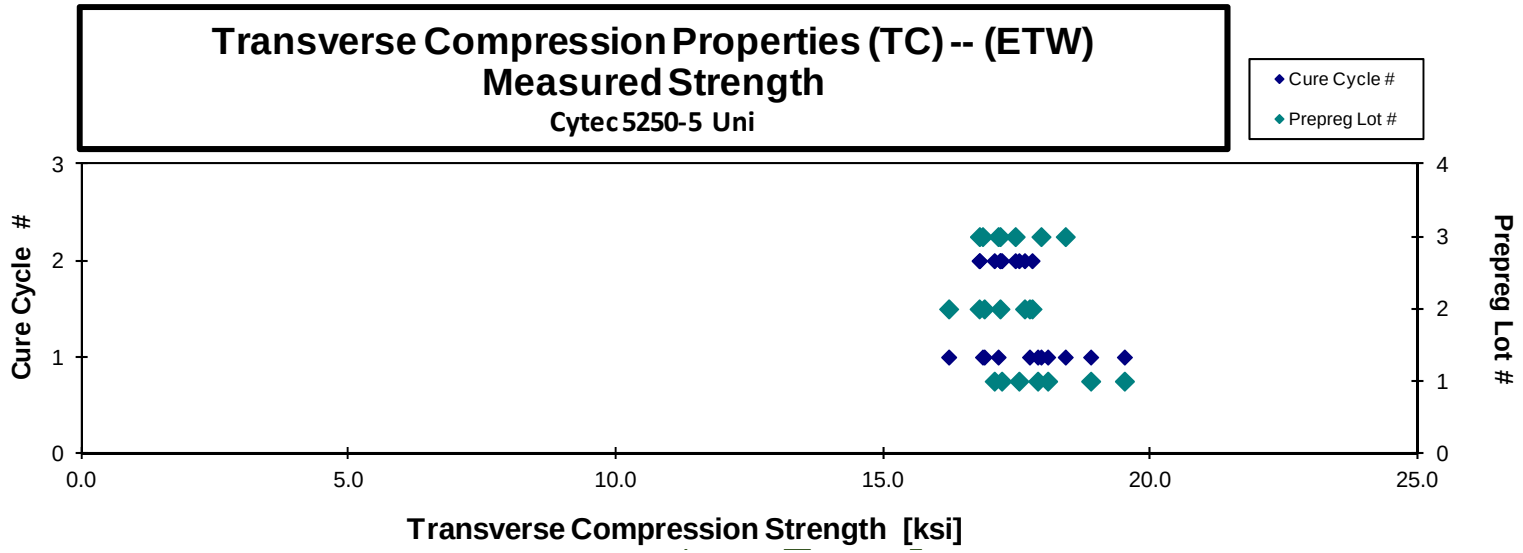

Transverse Compression Properties (TC) -- (RTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
Transverse Compression Strength [ksi]

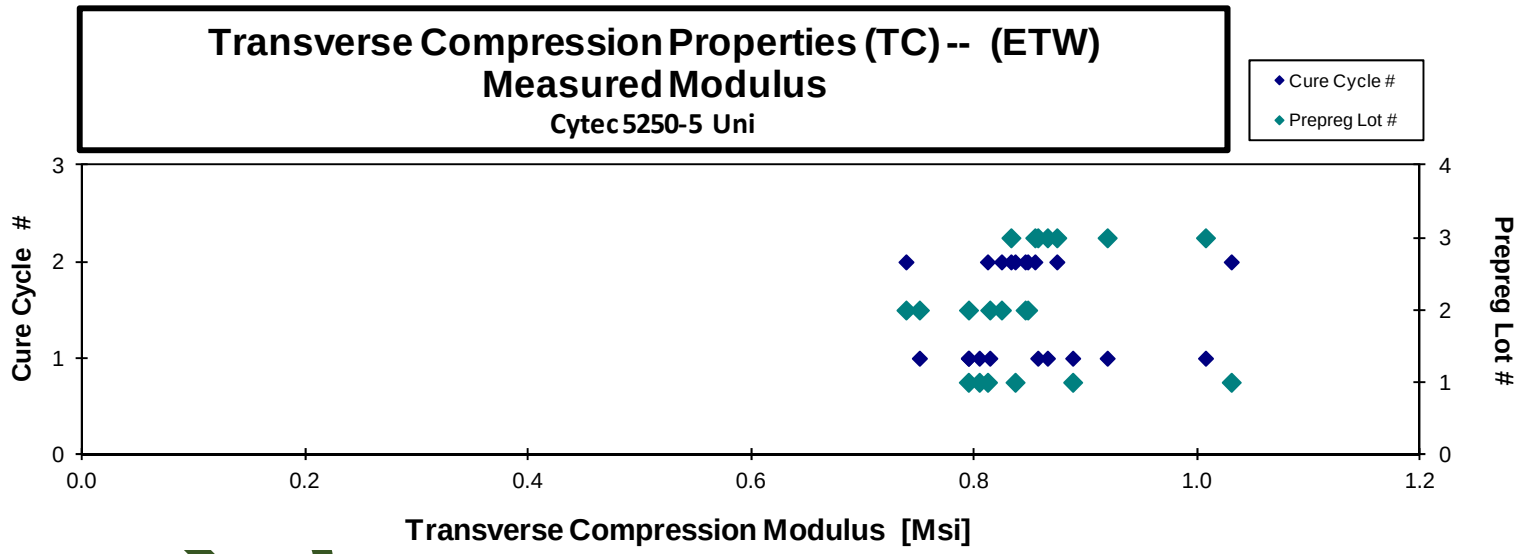

Transverse Compression Properties (TC) -- (RTD)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
Transverse Compression Modulus [Msi]

Transverse Compression Properties (TC) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode
CNAZA11CJ	A	C1	1	1		0.795	0.108	20	HAT
CNAZA11DJ	A	C1	1	1		0.805	0.109	20	HAT
CNAZA11FJ	A	C1	1	1		0.888	0.110	20	HGM
CNAZA11GJ	A	C1	1	1	19.512		0.110	20	HAT / HAB
CNAZA11HJ	A	C1	1	1	18.880		0.110	20	HAB
CNAZA11IJ	A	C1	1	1	17.889		0.109	20	HAT / HAB
CNAZA11JJ	A	C1	1	1	18.075		0.110	20	HGM / HAT / HAB
CNAZA219J	A	C2	1	2		1.031	0.106	20	HGM / HAT
CNAZA21AJ	A	C2	1	2		0.812	0.107	20	HGM
CNAZA21BJ	A	C2	1	2		0.837	0.108	20	HGM / HAT
CNAZA21CJ	A	C2	1	2	17.537		0.108	20	HGM
CNAZA21DJ	A	C2	1	2	17.076		0.109	20	HGM
CNAZA21EJ	A	C2	1	2	17.214		0.109	20	HGM
CNAZB11AJ	B	C1	2	1		0.814	0.108	20	BGM
CNAZB11BJ	B	C1	2	1		0.795	0.109	20	HGM / HAT
CNAZB11CJ	B	C1	2	1		0.751	0.110	20	HAT / BGM
CNAZB11DJ	B	C1	2	1	16.887		0.110	20	HAT / HGM
CNAZB11EJ	B	C1	2	1	17.736		0.110	20	HAT / HGM
CNAZB11FJ	B	C1	2	1	16.222		0.110	20	HAB / HGM
CNAZB21AJ	B	C2	2	2		0.739	0.106	20	HGM
CNAZB21BJ	B	C2	2	2		0.846	0.106	20	HGM / HAT
CNAZB21CJ	B	C2	2	2		0.848	0.106	20	BGM
CNAZB21DJ	B	C2	2	2		0.825	0.106	20	HGM / HAT
CNAZB21EJ	B	C2	2	2	16.793		0.107	20	HGM / HAT
CNAZB21FJ	B	C2	2	2	17.784		0.107	20	HGM / HAB
CNAZB21GJ	B	C2	2	2	17.643		0.107	20	BGM
CNAZB219J	B	C2	2	2	17.183		0.106	20	BGM
CNAZC119J	C	C1	3	1		1.007	0.106	20	BGM
CNAZC11AJ	C	C1	3	1		0.857	0.108	20	HAT / HAB
CNAZC11BJ	C	C1	3	1		0.919	0.109	20	HGM / HAT
CNAZC11CJ	C	C1	3	1		0.866	0.109	20	HGM / HAT
CNAZC11DJ	C	C1	3	1	18.405		0.109	20	BGM
CNAZC11EJ	C	C1	3	1	17.148		0.109	20	HAT / HAB
CNAZC11FJ	C	C1	3	1	17.950		0.109	20	HGM / HAT
CNAZC11GJ	C	C1	3	1	16.856		0.109	20	HGM / HAB
CNAZC219J	C	C2	3	2		0.854	0.106	20	HGM / HAB
CNAZC21AJ	C	C2	3	2		0.874	0.107	20	BGM / HAT
CNAZC21BJ	C	C2	3	2		0.833	0.108	20	HGM / HAB
CNAZC21CJ	C	C2	3	2	17.467		0.109	20	HGM / HAB
CNAZC21DJ	C	C2	3	2	17.185		0.110	20	HGM / HAT
CNAZC21EJ	C	C2	3	2	16.799		0.110	20	HGM / HAT

Average	**17.535**	**0.850**
Standard Dev.	**0.761**	**0.072**
Coeff. of Var. [%]	**4.341**	**8.483**
Min.	**16.222**	**0.739**
Max.	**19.512**	**1.031**
Number of Spec.	**21**	**20**


Transverse Compression Properties (TC) -- (ETW)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
Transverse Compression Strength [ksi]

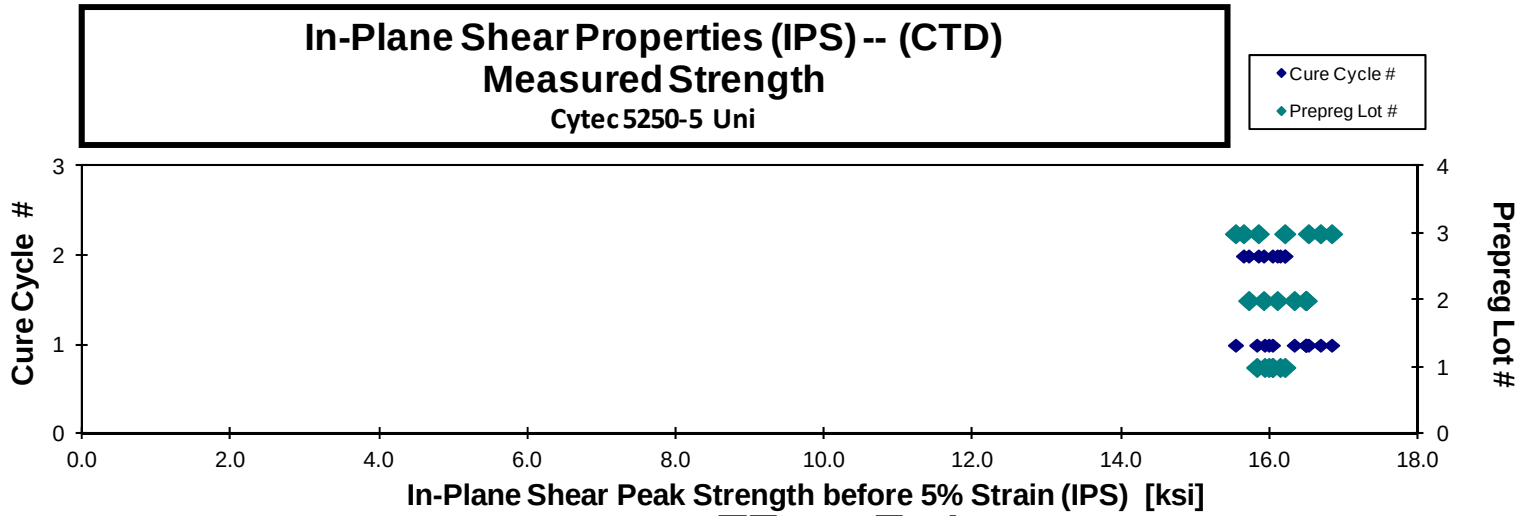

Transverse Compression Properties (TC) -- (ETW)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Transverse Compression Modulus [Msi]

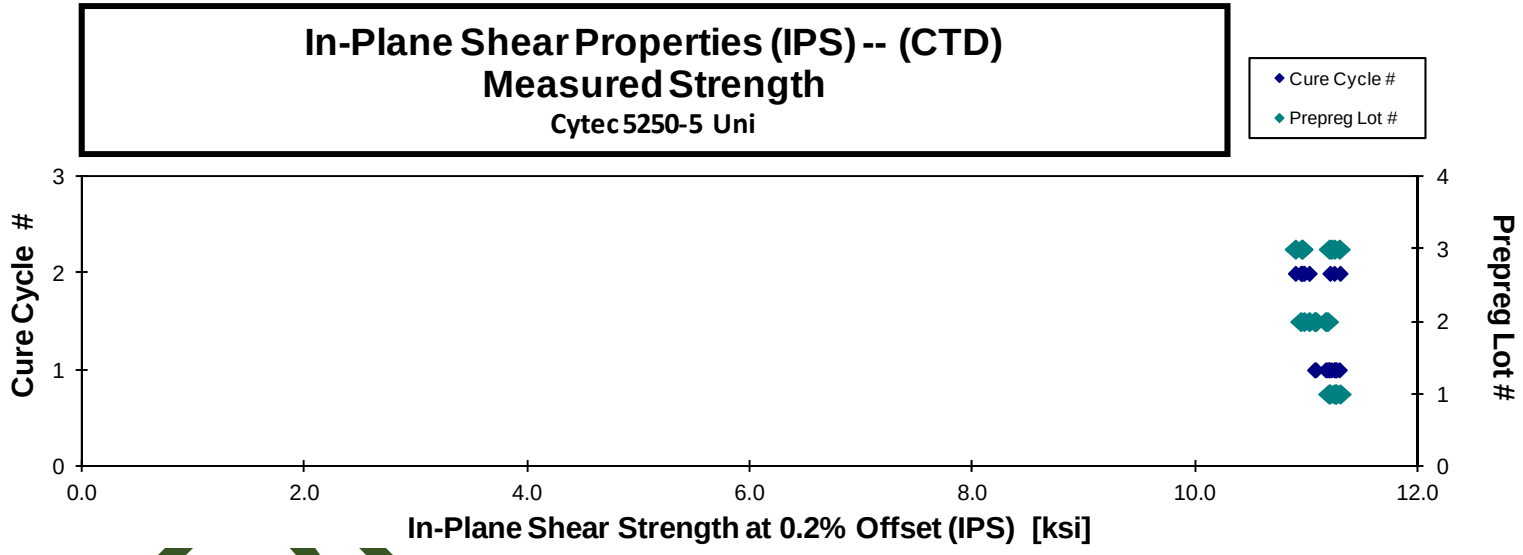
4.5 In-Plane Shear Properties (IPS)

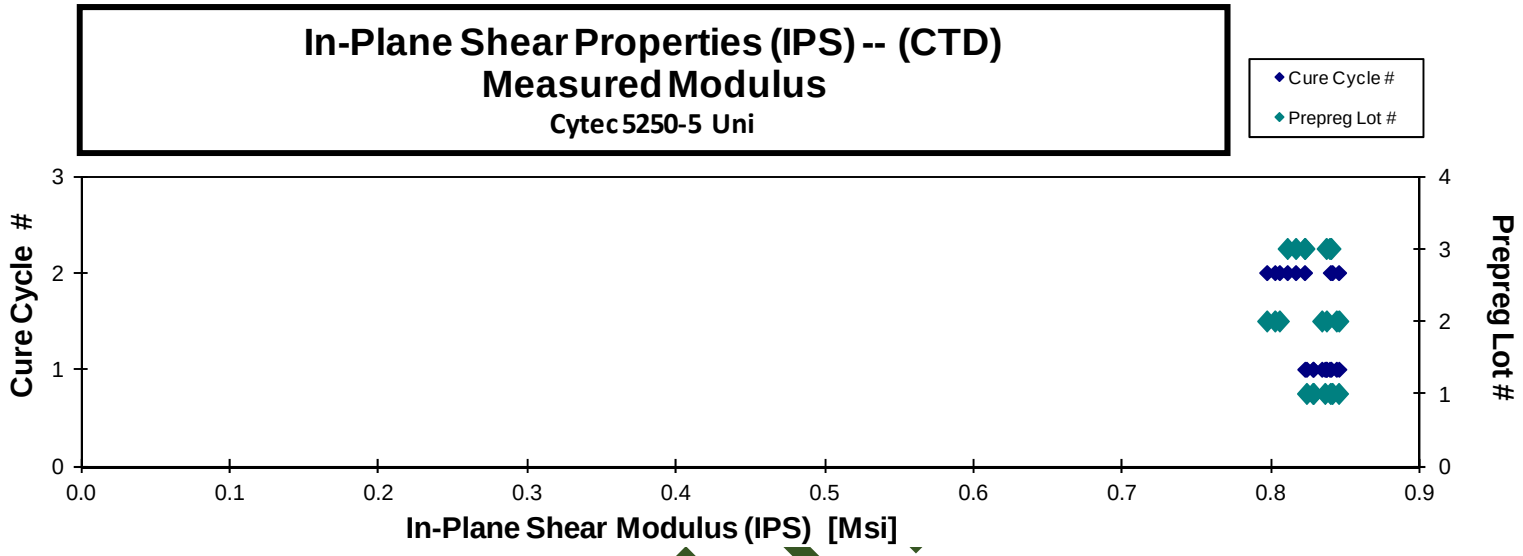
In-Plane Shear Properties (IPS) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Peak Shear Strength Before 5 % Strain [ksi]	0.2% Offset Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]
CNANA115B	A	C1	1	1	15.832	11.202	0.828	0.088	16	0.0055
CNANA116B	A	C1	1	1	15.937	11.266	0.828	0.088	16	0.0055
CNANA117B	A	C1	1	1	16.043	11.254	0.824	0.087	16	0.0054
CNANA118B	A	C1	1	1	15.994	11.268	0.836	0.087	16	0.0054
CNANA215B	A	C2	1	2	16.146	11.212	0.841	0.087	16	0.0054
CNANA216B	A	C2	1	2	16.043	11.250	0.840	0.087	16	0.0054
CNANA217B	A	C2	1	2	16.210	11.303	0.845	0.086	16	0.0054
CNANB115B	B	C1	2	1	16.337	11.084	0.845	0.086	16	0.0054
CNANB116B	B	C1	2	1	16.498	11.173	0.837	0.086	16	0.0054
CNANB117B	B	C1	2	1	16.491	11.189	0.834	0.086	16	0.0054
CNANB118B	B	C1	2	1	16.491	11.074	0.844	0.086	16	0.0054
CNANB215B	B	C2	2	2	15.924	10.950	0.797	0.089	16	0.0056
CNANB216B	B	C2	2	2	16.107	11.025	0.802	0.089	16	0.0055
CNANB217B	B	C2	2	2	15.722	10.979	0.805	0.088	16	0.0055
CNANC115B	C	C1	3	1	16.528	11.251	0.837	0.086	16	0.0054
CNANC116B	C	C1	3	1	15.545	11.295	0.840	0.086	16	0.0054
CNANC117B	C	C1	3	1	16.690	11.206	0.822	0.086	16	0.0054
CNANC118B	C	C1	3	1	16.841	11.223	0.839	0.086	16	0.0054
CNANC214B	C	C2	3	2	15.653	10.901	0.811	0.087	16	0.0055
CNANC215B	C	C2	3	2	16.209	10.960	0.816	0.087	16	0.0055
CNANC216B	C	C2	3	2	15.853	10.960	0.822	0.088	16	0.0055

Average	**16.15**	**11.144**	**0.83**	**Average**	**0.0054**
Standard Dev.	**0.35**	**0.132**	**0.01**	**Standard Dev.**	
Coeff. of Var. [%]	**2.16**	**1.185**	**1.78**	**Coeff. of Var. [%]**	
Min.	**15.54**	**10.901**	**0.80**	**Min.**	**0.0054**
Max.	**16.84**	**11.303**	**0.85**	**Max.**	**0.0056**
Number of Spec.	**21.00**	**21**	**21.00**	**Number of Spec.**	**21**


In-Plane Shear Properties (IPS) -- (CTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
In-Plane Shear Peak Strength before 5% Strain (IPS) [ksi]

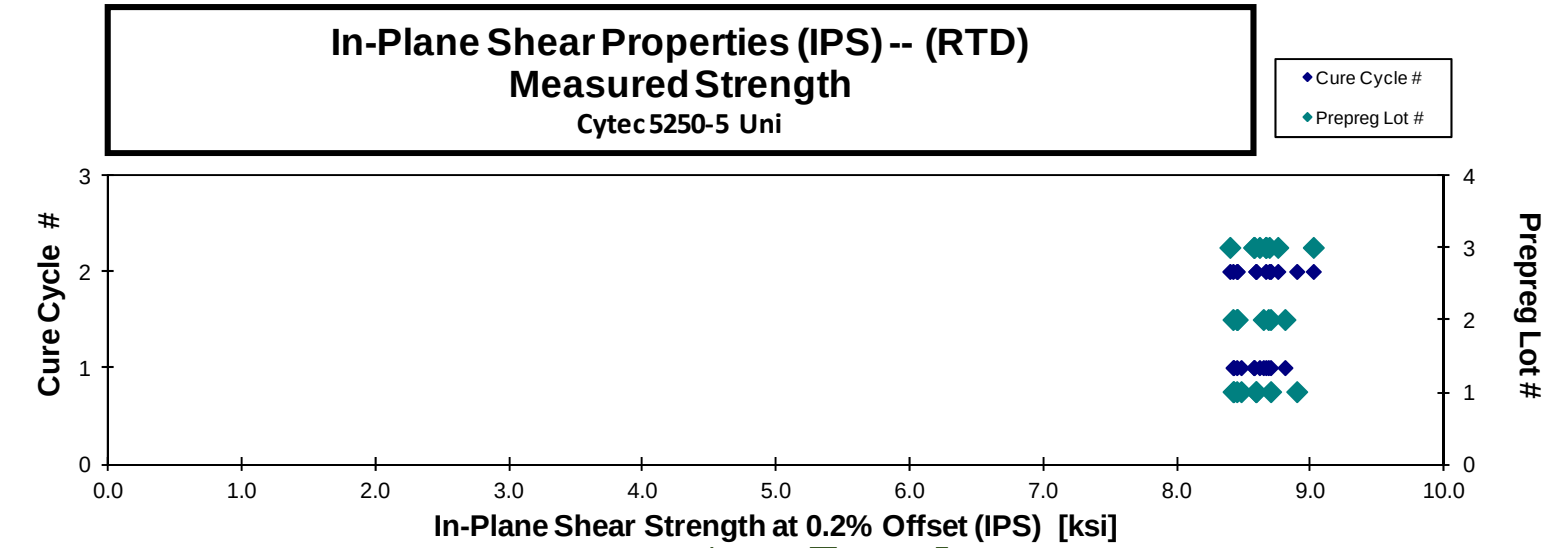

In-Plane Shear Properties (IPS) -- (CTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]

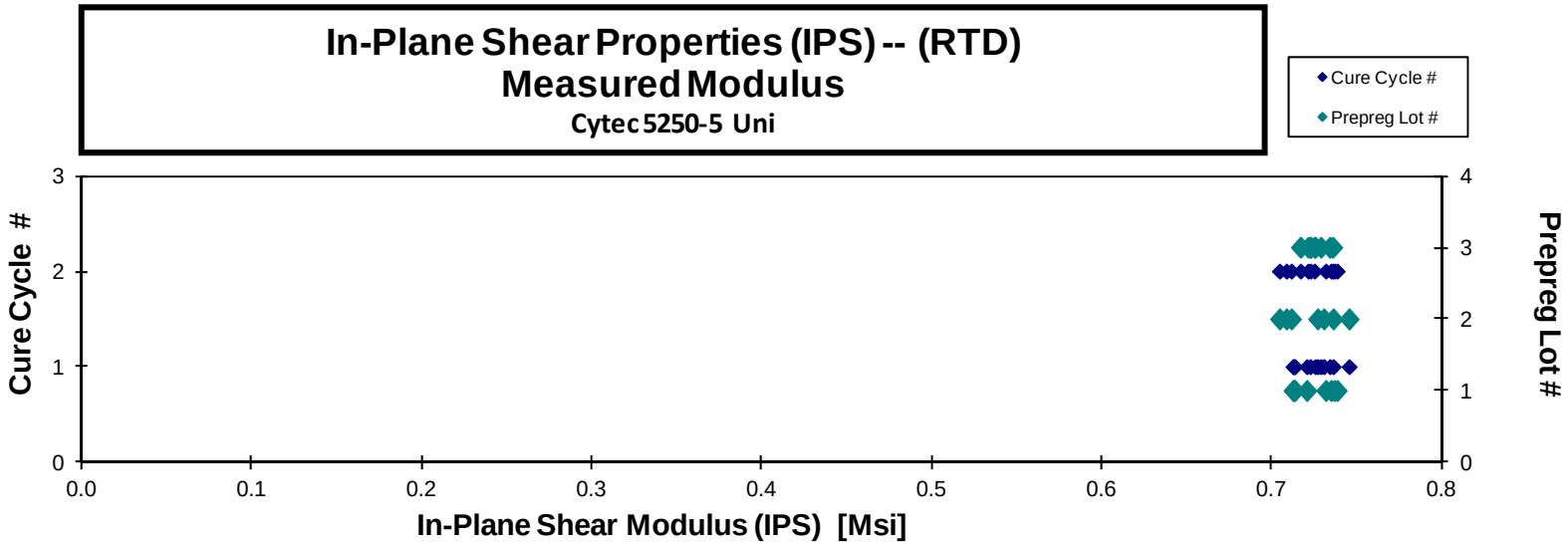

In-Plane Shear Properties (IPS) -- (CTD)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
In-Plane Shear Modulus (IPS) [Msi]

In-Plane Shear Properties (IPS) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	0.2% Offset Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]
CNANA111A	A	C1	1	1	8.484	0.721	0.088	16	0.0055
CNANA112A	A	C1	1	1	8.451	0.714	0.088	16	0.0055
CNANA113A	A	C1	1	1	8.424	0.713	0.088	16	0.0055
CNANA114A	A	C1	1	1	8.428	0.713	0.088	16	0.0055
CNANA211A	A	C2	1	2	8.705	0.737	0.085	16	0.0053
CNANA212A	A	C2	1	2	8.593	0.735	0.086	16	0.0054
CNANA213A	A	C2	1	2	8.900	0.738	0.086	16	0.0054
CNANA214A	A	C2	1	2	8.596	0.732	0.086	16	0.0054
CNANB111A	B	C1	2	1	8.812	0.745	0.085	16	0.0053
CNANB112A	B	C1	2	1	8.704	0.736	0.085	16	0.0053
CNANB113A	B	C1	2	1	8.650	0.731	0.086	16	0.0053
CNANB114A	B	C1	2	1	8.687	0.727	0.086	16	0.0054
CNANB211A	B	C2	2	2	8.455	0.712	0.087	16	0.0054
CNANB212A	B	C2	2	2	8.423	0.705	0.087	16	0.0055
CNANB213A	B	C2	2	2	8.451	0.709	0.088	16	0.0055
CNANC2R7A	C	C2	3	2	8.668	0.723	0.087	16	0.0054
CNANC2R8A	C	C2	3	2	9.024	0.725	0.086	16	0.0054
CNANC111A	C	C1	3	1	8.582	0.726	0.086	16	0.0054
CNANC112A	C	C1	3	1	8.578	0.723	0.086	16	0.0054
CNANC113A	C	C1	3	1	8.621	0.729	0.087	16	0.0054
CNANC114A	C	C1	3	1	8.669	0.734	0.086	16	0.0054
CNANC211A	C	C2	3	2	8.694	0.736	0.086	16	0.0054
CNANC212A	C	C2	3	2	8.400	0.717	0.087	16	0.0054
CNANC213A	C	C2	3	2	8.758	0.721	0.087	16	0.0055

Average	**8.615**	**0.72**	**Average**	**0.0054**
Standard Dev.	**0.161**	**0.01**	**Standard Dev.**	
Coeff. of Var. [%]	**1.871**	**1.49**	**Coeff. of Var. [%]**	
Min.	**8.400**	**0.70**	**Min.**	**0.0053**
Max.	**9.024**	**0.75**	**Max.**	**0.0055**
Number of Spec.	**24**	**24.00**	**Number of Spec.**	**24**


In-Plane Shear Properties (IPS) -- (RTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]

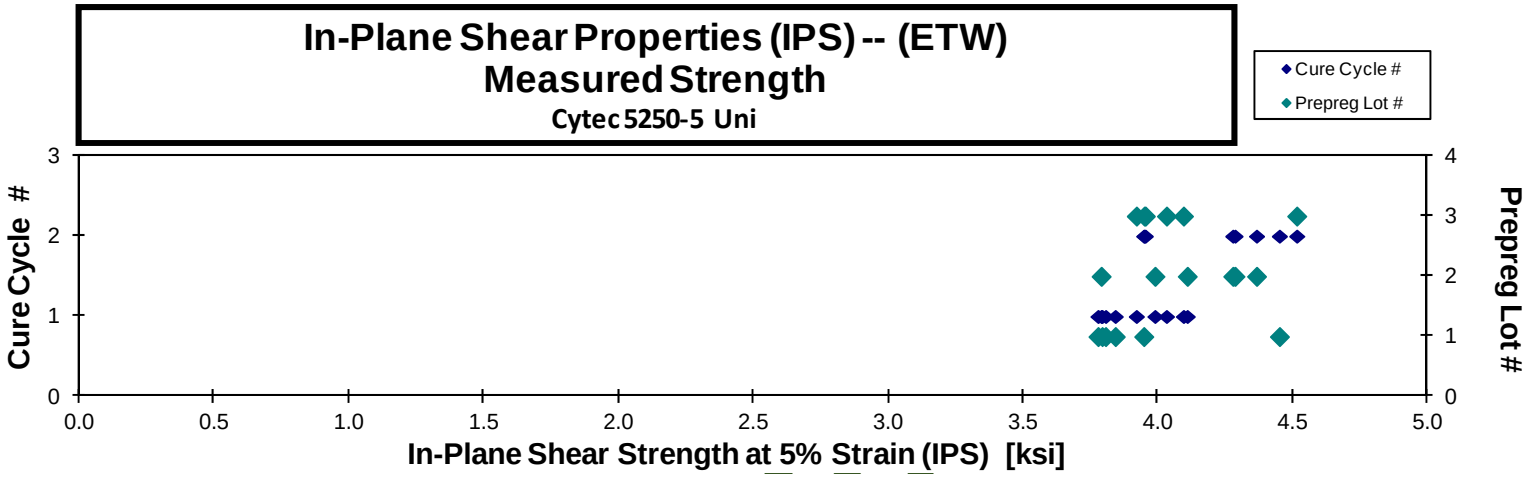

In-Plane Shear Properties (IPS) -- (RTD)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
In-Plane Shear Modulus (IPS) [Msi]

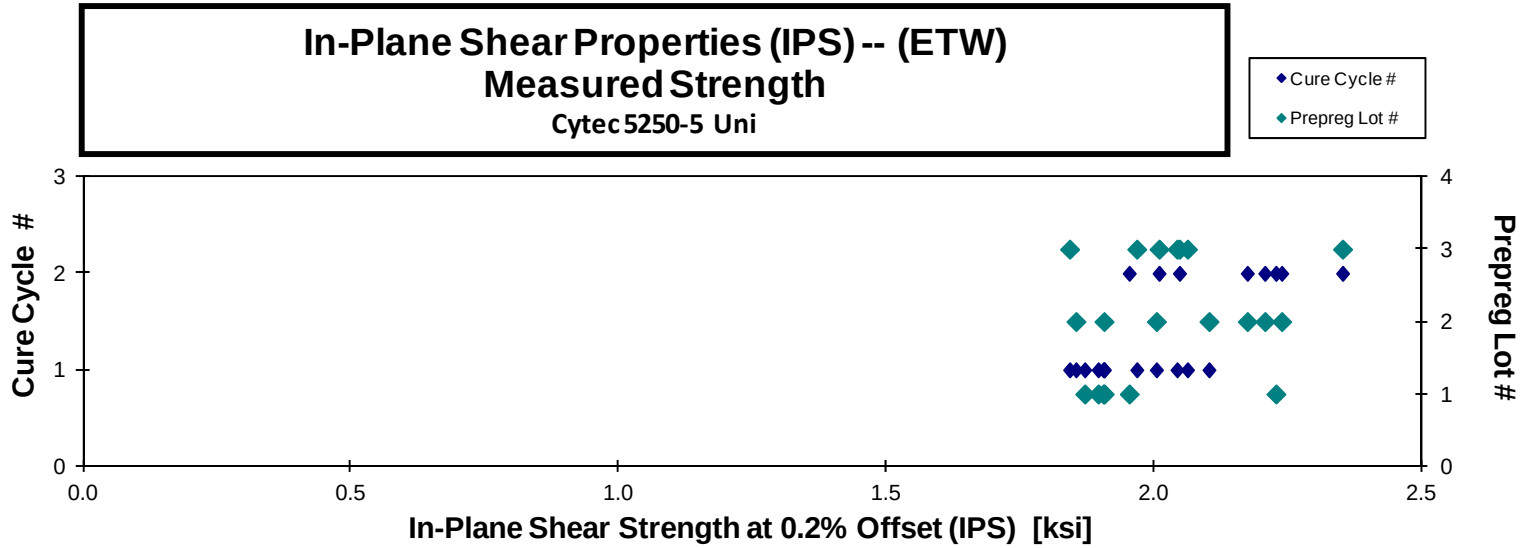
In-Plane Shear Properties (IPS) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

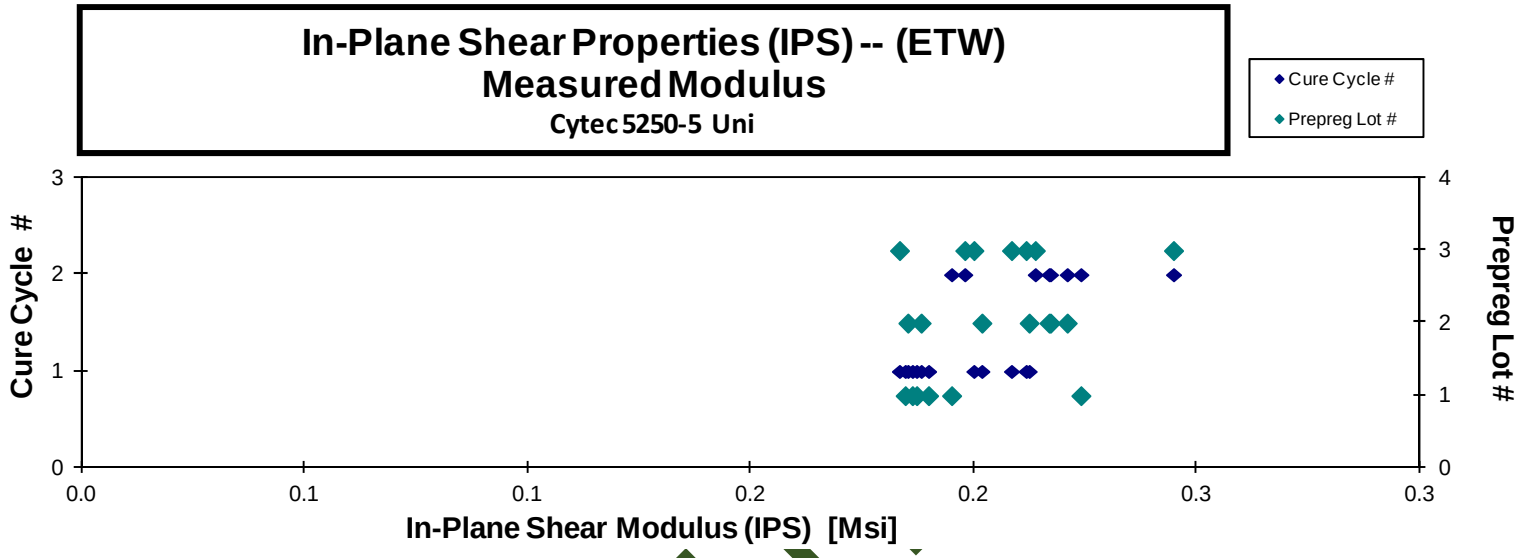
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength at 5% Strain [ksi]	0.2% Offset Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]
CNANA119J	A	C1	1	1	3.779	1.870	0.185	0.087	16	0.0054
CNANA11AJ	A	C1	1	1	3.843	1.895	0.186	0.088	16	0.0055
CNANA11BJ	A	C1	1	1	3.794	1.904	0.187	0.088	16	0.0055
CNANA11CJ	A	C1	1	1	3.807	1.906	0.190	0.089	16	0.0055
CNANA219J	A	C2	1	2	3.948	1.953	0.195	0.085	16	0.0053
CNANA21AJ	A	C2	1	2	4.451	2.227	0.224	0.085	16	0.0053
CNANB119J	B	C1	2	1	3.990	2.003	0.202	0.084	16	0.0053
CNANB11AJ	B	C1	2	1	3.790	1.853	0.185	0.085	16	0.0053
CNANB11BJ*	B	C1	2	1		1.906	0.188	0.085	16	0.0053
CNANB11CJ	B	C1	2	1	4.110	2.102	0.212	0.086	16	0.0054
CNANB219J	B	C2	2	2	4.367	2.173	0.217	0.087	16	0.0054
CNANB21AJ	B	C2	2	2	4.279	2.206	0.217	0.087	16	0.0054
CNANB21BJ	B	C2	2	2	4.287	2.238	0.221	0.088	16	0.0055
CNANC119J	C	C1	3	1		1.841	0.183	0.086	16	0.0054
CNANC11AJ	C	C1	3	1	4.032	2.042	0.212	0.087	16	0.0054
CNANC11BJ	C	C1	3	1	4.095	2.062	0.208	0.086	16	0.0054
CNANC11CJ	C	C1	3	1	3.921	1.967	0.200	0.086	16	0.0054
CNANC219J	C	C2	3	2	3.954	2.047	0.214	0.086	16	0.0054
CNANC21AJ	C	C2	3	2	3.950	2.008	0.198	0.087	16	0.0054
CNANC21BJ	C	C2	3	2	4.516	2.351	0.245	0.087	16	0.0055

*** 5% Strain not reported due to strain gauge failure**

Average	**4.05**	**2.028**	**0.20**	**Average**	**0.0054**
Standard Dev.	**0.24**	**0.147**	**0.02**	**Standard Dev.**	
Coeff. of Var. [%]	**5.84**	**7.258**	**8.19**	**Coeff. of Var. [%]**	
Min.	**3.78**	**1.841**	**0.18**	**Min.**	**0.0053**
Max.	**4.52**	**2.351**	**0.24**	**Max.**	**0.0055**
Number of Spec.	**18.00**	**20**	**20**	**Number of Spec.**	**20**


In-Plane Shear Properties (IPS) -- (ETW)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
In-Plane Shear Strength at 5% Strain (IPS) [ksi]


In-Plane Shear Properties (IPS) -- (ETW)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.5
1.0
1.5
2.0
2.5
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]


In-Plane Shear Properties (IPS) -- (ETW)
Measured Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
In-Plane Shear Modulus (IPS) [Msi]
0.0
0.1
0.1
0.2
0.2
0.3
0.3
0
1
2
3
4

4.6 "50/0/50" Unnotched Tension 0 Properties (UNT0)

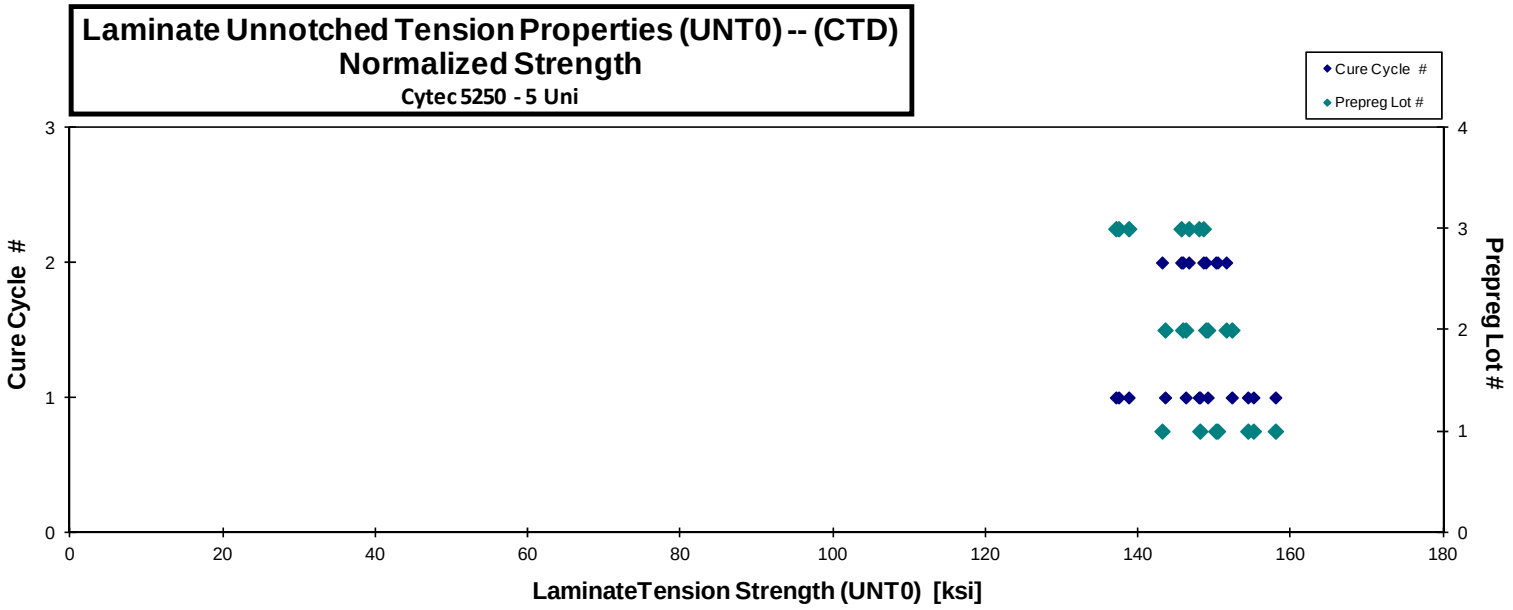
Laminate Unnotched Tension Properties (UNT0) -- (CTD)
Strength & Modulus
Cytec 5250 - 5 Uni

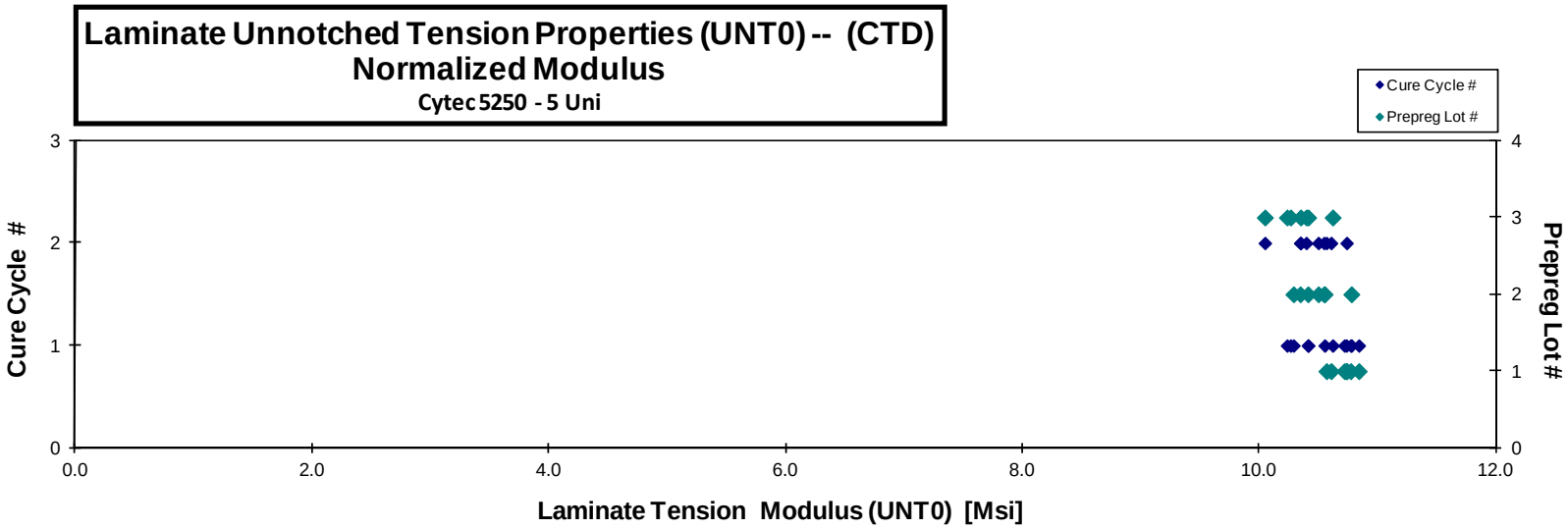
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAPA116B	A	C1	1	1	154.148	10.827	0.066	12	LAB	0.0055	154.382	10.843
CNAPA117B	A	C1	1	1	146.537	10.608	0.067	12	LWT	0.0056	148.091	10.721
CNAPA118B	A	C1	1	1	154.906	10.725	0.066	12	LWB	0.0055	155.102	10.738
CNAPA119B	A	C1	1	1	162.675	11.094	0.064	12	LAT	0.0053	157.992	10.774
CNAPA215B	A	C2	1	2	152.570	10.911	0.065	12	LWB	0.0054	150.181	10.740
CNAPA216B	A	C2	1	2	152.448	10.752	0.065	12	LGM	0.0054	150.408	10.609
CNAPA217B	A	C2	1	2	150.701	11.129	0.063	12	LGM	0.0052	143.128	10.570
CNAPB115B	B	C1	2	1	153.640	10.876	0.065	12	LWT	0.0055	152.282	10.780
CNAPB116B	B	C1	2	1	149.318	10.634	0.065	12	LGM	0.0054	146.226	10.413
CNAPB117B	B	C1	2	1	149.957	10.753	0.063	12	LGM	0.0053	143.519	10.291
CNAPB118B	B	C1	2	1	155.062	10.976	0.063	12	LAT	0.0053	149.110	10.555
CNAPB215B	B	C2	2	2	153.946	10.909	0.064	12	LGM	0.0053	148.853	10.548
CNAPB216B	B	C2	2	2	151.307	10.894	0.064	12	LAB	0.0053	145.843	10.501
CNAPB217B	B	C2	2	2	159.479	10.890	0.063	12	LWB	0.0052	151.545	10.348
CNAPC115B	C	C1	3	1	138.123	10.345	0.066	12	LAT	0.0055	137.077	10.267
CNAPC116B	C	C1	3	1	140.458	10.362	0.065	12	LAT	0.0054	138.755	10.237
CNAPC117B	C	C1	3	1	140.701	10.663	0.064	12	LGM	0.0054	137.432	10.415
CNAPC118B	C	C1	3	1	147.838	10.615	0.066	12	LWT	0.0055	147.950	10.623
CNAPC215B	C	C2	3	2	146.970	10.142	0.065	12	LWB/LWT	0.0055	145.634	10.049
CNAPC216B	C	C2	3	2	147.786	10.480	0.065	12	LWB	0.0055	146.629	10.398
CNAPC217B	C	C2	3	2	150.136	10.462	0.065	12	LWT	0.0054	148.544	10.351

Average	150.415	10.717
Standard Dev.	5.947	0.255
Coeff. of Var. [%]	3.954	2.382
Min.	138.123	10.142
Max.	162.675	11.129
Number of Spec.	21	21

$Average_{norm}$	0.0054	147.556	10.513
$Standard\ Dev._{norm}$		5.505	0.213
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.731	2.028
Min.	0.0052	137.077	10.049
Max.	0.0056	157.992	10.843
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT0) -- (CTD)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
0
20
40
60
80
100
120
140
160
180
LaminateTension Strength (UNT0) [ksi]


Laminate Unnotched Tension Properties (UNT0) -- (CTD)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
0.0
2.0
4.0
6.0
8.0
10.0
12.0
Laminate Tension Modulus (UNT0) [Msi]

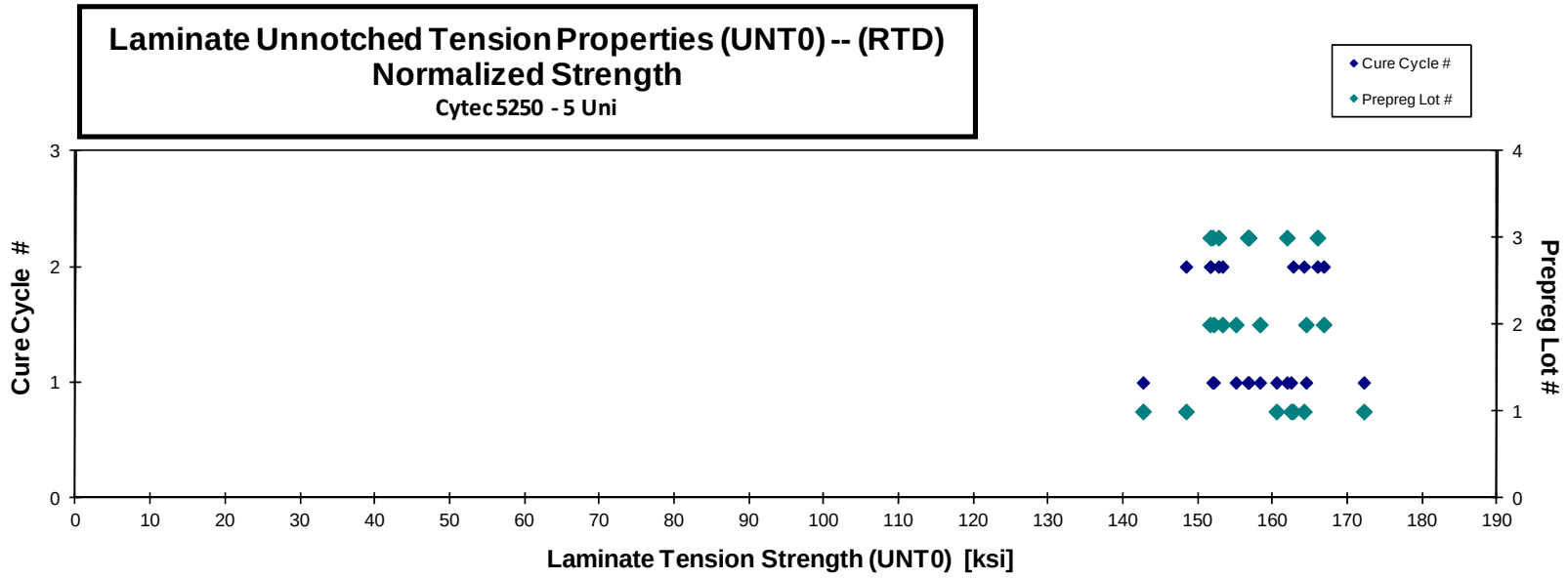
Laminate Unnotched Tension Properties (UNT0) -- (RTD)
Strength & Modulus
Cytec 5250 - 5 Uni

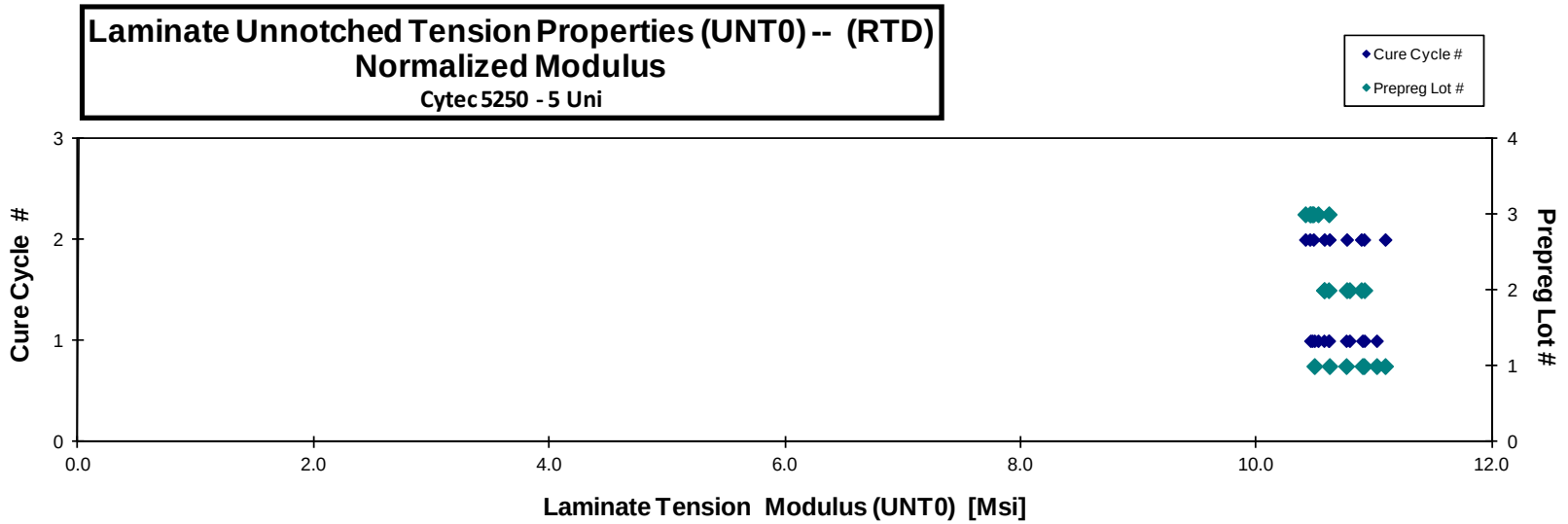
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAPA111A	A	C1	1	1	145.307	10.691	0.065	12	LWB	0.0054	142.629	10.494
CNAPA112A	A	C1	1	1	171.714	10.994	0.066	12	LAT / LAB / DGM	0.0055	172.148	11.022
CNAPA113A	A	C1	1	1	159.181	10.814	0.067	12	LWB / LAT	0.0055	160.468	10.901
CNAPA114A	A	C1	1	1	161.713	10.718	0.066	12	LAT	0.0055	162.408	10.764
CNAPA211A	A	C2	1	2	172.683	11.483	0.063	12	LGM	0.0052	164.136	10.915
CNAPA212A	A	C2	1	2	152.109	10.888	0.064	12	LWB	0.0054	148.383	10.622
CNAPA213A	A	C2	1	2	165.202	11.265	0.065	12	LAB	0.0054	162.699	11.095
CNAPB111A	B	C1	2	1	158.280	11.005	0.063	12	LAT	0.0053	152.085	10.574
CNAPB112A	B	C1	2	1	160.132	10.963	0.064	12	LAT	0.0053	155.037	10.614
CNAPB113A	B	C1	2	1	168.206	11.169	0.065	12	LWT	0.0054	164.426	10.918
CNAPB114A	B	C1	2	1	160.323	10.933	0.065	12	LWT	0.0054	158.258	10.792
CNAPB211A	B	C2	2	2	157.196	10.968	0.064	12	LGM	0.0053	151.599	10.578
CNAPB212A	B	C2	2	2	158.773	11.157	0.064	12	LWB	0.0053	153.240	10.768
CNAPB213A	B	C2	2	2	172.400	11.258	0.064	12	LGM	0.0053	166.784	10.891
CNAPC111A	C	C1	3	1	158.680	10.755	0.065	12	LAT	0.0054	156.636	10.616
CNAPC112A	C	C1	3	1	152.970	10.532	0.066	12	LGM	0.0055	151.927	10.460
CNAPC113A	C	C1	3	1	158.452	10.587	0.065	12	LGM	0.0054	156.771	10.475
CNAPC114A	C	C1	3	1	164.450	10.692	0.065	12	LGM	0.0054	161.875	10.525
CNAPC211A	C	C2	3	2	169.939	10.707	0.064	12	LAB	0.0054	165.948	10.455
CNAPC212A	C	C2	3	2	154.359	10.526	0.063	12	LGM	0.0054	152.722	10.417
CNAPC213A	C	C2	3	2	150.086	10.378	0.067	12	LGM	0.0056	151.640	10.485

Average	160.579	10.880	
Standard Dev.	7.535	0.282	
Coeff. of Var. [%]	4.693	2.593	
Min.	145.307	10.378	
Max.	172.683	11.483	
Number of Spec.	21	21	

$Average_{norm}$	0.0054	157.706	10.685
$Standard\ Dev._{norm}$		7.159	0.208
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.539	1.943
Min.	0.0052	142.629	10.417
Max.	0.0056	172.148	11.095
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT0) -- (RTD)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Tension Strength (UNT0) [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190


Laminate Unnotched Tension Properties (UNT0) -- (RTD)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Tension Modulus (UNT0) [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0

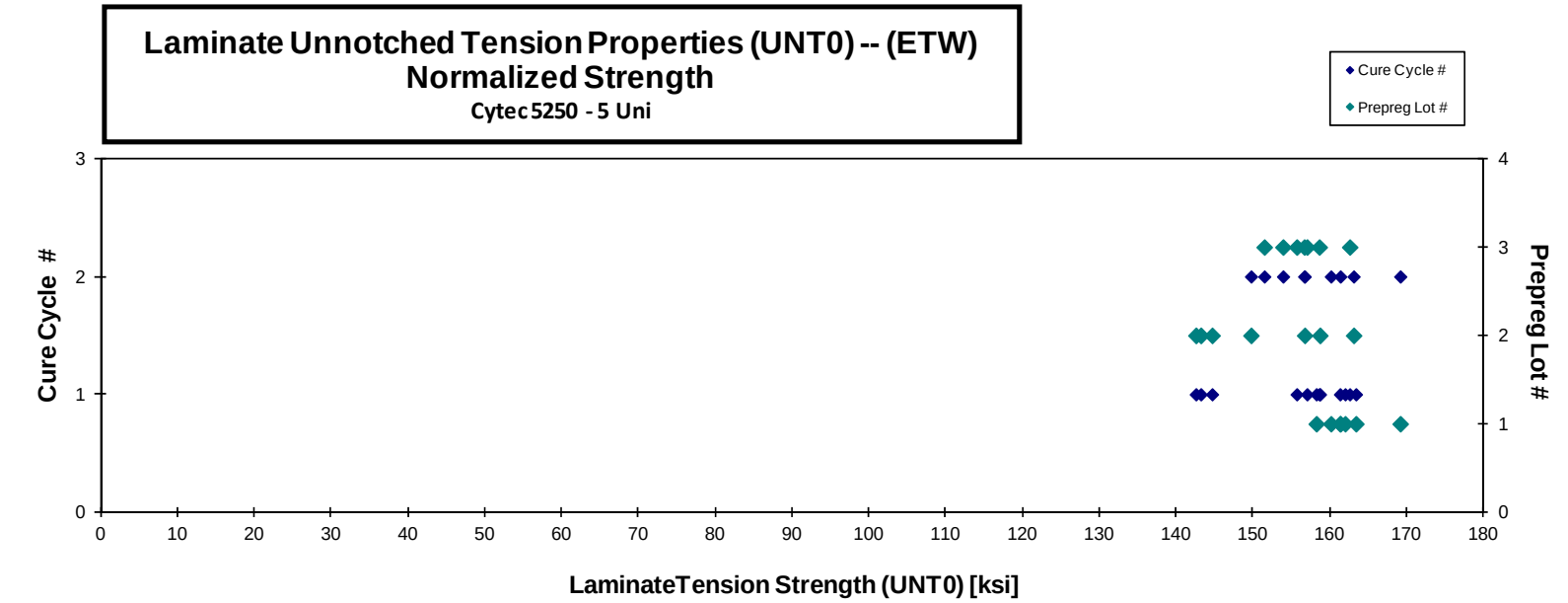
Laminate Unnotched Tension Properties (UNT0) -- (ETW)
Strength & Modulus
Cytec 5250 - 5 Uni

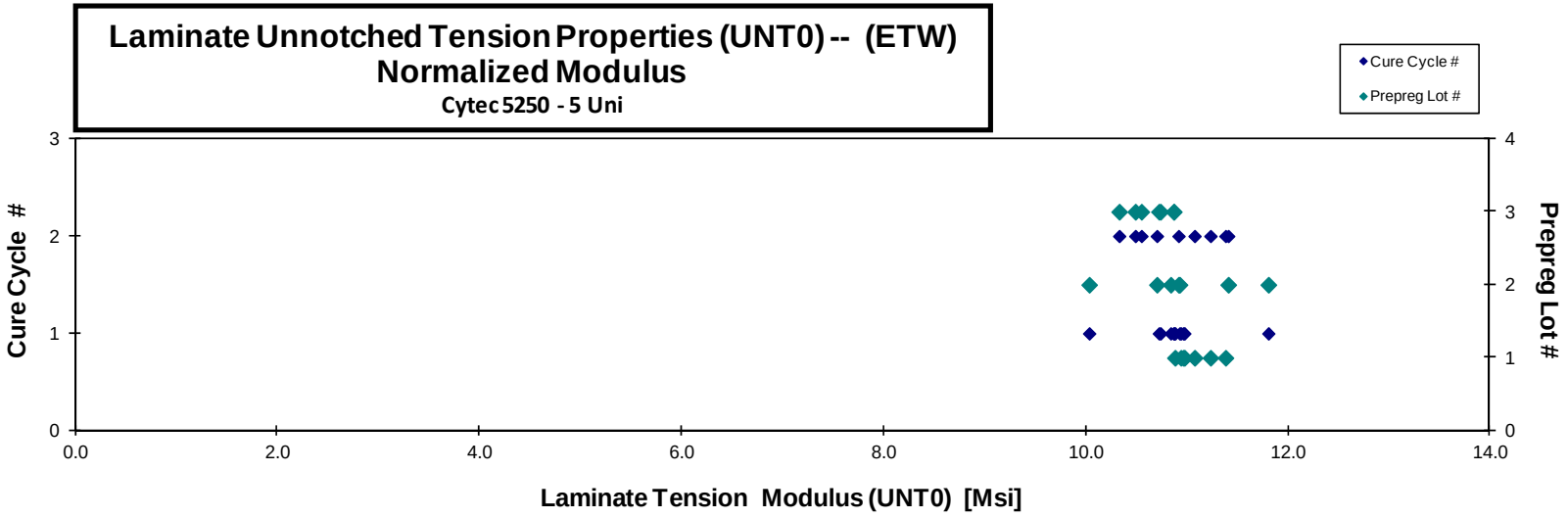
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAPA11BJ	A	C1	1	1	163.872	11.068	0.065	12	LAB	0.0054	161.968	10.940
CNAPA11CJ	A	C1	1	1	162.830	11.067	0.065	12	LAB/LAT	0.0054	161.308	10.963
CNAPA11EJ	A	C1	1	1	162.192	10.896	0.066	12	LAB	0.0055	163.380	10.975
CNAPA11FJ	A	C1	1	1	158.828	10.924	0.066	12	LWT	0.0055	158.226	10.882
CNAPA218J	A	C2	1	2	166.393	11.421	0.064	12	LWT/LAB	0.0053	161.351	11.075
CNAPA219J	A	C2	1	2	163.972	11.656	0.064	12	LAB	0.0054	160.121	11.382
CNAPA21AJ	A	C2	1	2	172.642	11.465	0.065	12	LGM	0.0054	169.155	11.233
CNAPB119J	B	C1	2	1	160.974	10.995	0.065	12	LAT/LAB	0.0054	158.697	10.839
CNAPB11AJ	B	C1	2	1	147.041	11.272	0.064	12	LGM	0.0053	142.549	10.928
CNAPB11BJ	B	C1	2	1	147.351	12.149	0.064	12	LGM	0.0053	143.183	11.806
CNAPB11CJ	B	C1	2	1	148.753	10.317	0.064	12	LAT	0.0053	144.659	10.033
CNAPB218J	B	C2	2	2	157.313	11.245	0.063	12	LWT	0.0052	149.725	10.703
CNAPB219J	B	C2	2	2	169.684	11.870	0.063	12	LWB	0.0053	163.085	11.409
CNAPB21AJ	B	C2	2	2	163.438	11.386	0.063	12	LGM	0.0053	156.711	10.917
CNAPC119J	C	C1	3	1	159.652	10.941	0.066	12	LGM	0.0055	158.604	10.869
CNAPC11AJ	C	C1	3	1	157.102	10.837	0.065	12	LMG	0.0055	155.674	10.739
CNAPC11BJ	C	C1	3	1	158.982	10.857	0.065	12	LAT	0.0054	157.015	10.723
CNAPC11CJ	C	C1	3	1	165.285	11.051	0.065	12	LGM	0.0054	162.572	10.870
CNAPC218J	C	C2	3	2	160.335	10.736	0.064	12	LAB	0.0054	156.651	10.489
CNAPC219J	C	C2	3	2	157.066	10.543	0.065	12	LAT	0.0054	153.893	10.330
CNAPC21AJ	C	C2	3	2	153.427	10.687	0.065	12	LGM	0.0054	151.452	10.549

Average	**159.863**	**11.113**	
Standard Dev.	**6.719**	**0.438**	
Coeff. of Var. [%]	**4.203**	**3.941**	
Min.	**147.041**	**10.317**	
Max.	**172.642**	**12.149**	
Number of Spec.	**21**	**21**	

$Average_{norm}$	**0.0054**	**156.666**	**10.888**
$Standard\ Dev._{norm}$		**7.001**	**0.383**
Coeff. of Var. [%]$_{norm}$		**4.469**	**3.517**
Min.	**0.0052**	**142.549**	**10.033**
Max.	**0.0055**	**169.155**	**11.806**
Number of Spec.		**21**	**21**


Laminate Unnotched Tension Properties (UNT0) -- (ETW)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
LaminateTension Strength (UNT0) [ksi]


Laminate Unnotched Tension Properties (UNT0) -- (ETW)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Tension Modulus (UNT0) [Msi]

4.7 "25/50/25" Unnotched Tension 1 Properties (UNT1)

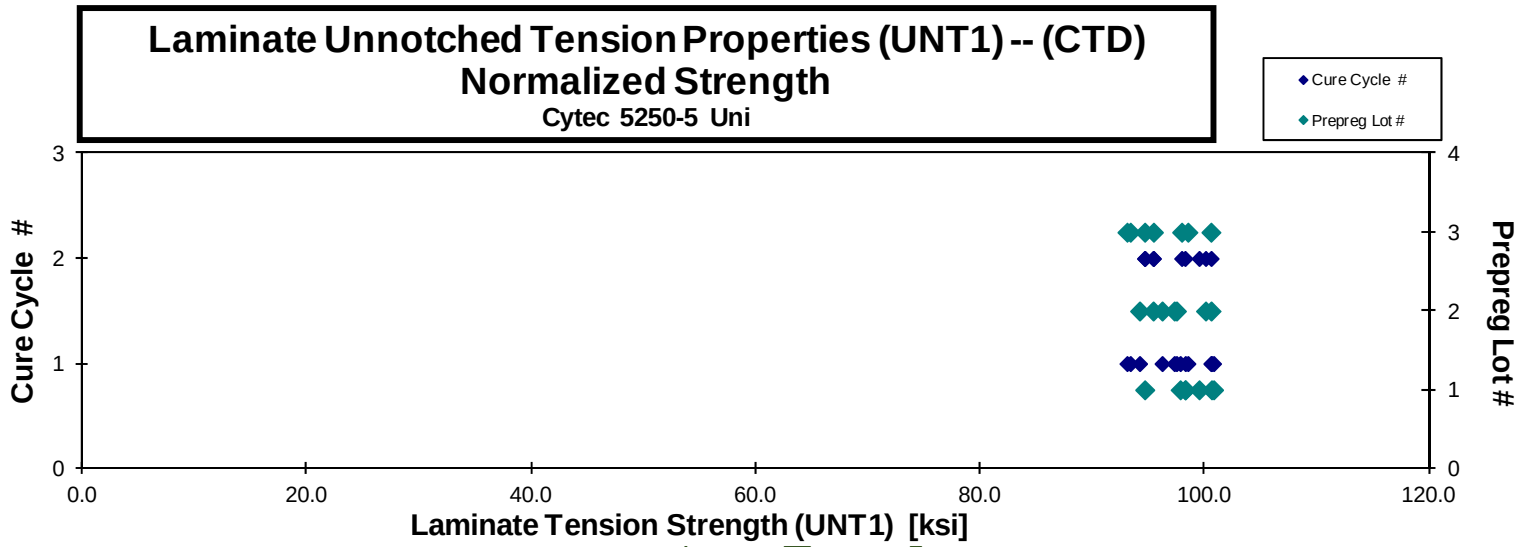
Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAAA116B	A	C1	1	1	99.716	7.606	0.089	16	M[A,L]GM	0.0055	100.604	7.674
CNAAA117B	A	C1	1	1	100.693	7.651	0.088	16	M[A,L]GM	0.0055	100.788	7.658
CNAAA118B	A	C1	1	1	98.035	7.629	0.088	16	M[A,L]GM	0.0055	97.812	7.612
CNAAA119B	A	C1	1	1	99.564	7.734	0.087	16	M[A,L]GM	0.0054	98.263	7.632
CNAAA216B	A	C2	1	2	98.750	7.665	0.088	16	M[A,L]WT/LAB	0.0055	98.245	7.626
CNAAA217B	A	C2	1	2	99.197	7.525	0.088	16	M[A,L]AT	0.0055	99.497	7.548
CNAAA218B	A	C2	1	2	94.940	7.669	0.088	16	M[A,L]WT	0.0055	94.653	7.646
CNAAB116B	B	C1	2	1	97.010	7.431	0.088	16	M[A,L]GM	0.0055	97.285	7.453
CNAAB117B	B	C1	2	1	93.786	7.470	0.088	16	M[A,L]GM	0.0055	94.194	7.503
CNAAB118B	B	C1	2	1	97.150	7.487	0.088	16	M[A,L]WB	0.0055	97.481	7.513
CNAAB119B	B	C1	2	1	97.545	7.665	0.087	16	M[A,L]WT	0.0054	96.197	7.559
CNAAB216B	B	C2	2	2	96.055	7.618	0.087	16	LWT	0.0055	95.400	7.566
CNAAB217B	B	C2	2	2	101.049	7.638	0.087	16	M[A,L]WB	0.0054	100.073	7.564
CNAAB218B	B	C2	2	2	101.235	7.550	0.087	16	LWB	0.0055	100.564	7.500
CNAAC116B	C	C1	3	1	94.087	7.379	0.087	16	LWB	0.0054	93.072	7.300
CNAAC117B	C	C1	3	1	93.937	7.459	0.087	16	M[A,L]GM	0.0055	93.367	7.414
CNAAC118B	C	C1	3	1	98.593	7.472	0.088	16	M[A,L]WT	0.0055	98.499	7.465
CNAAC119B	C	C1	3	1	104.861	7.803	0.084	16	M[A,L]WB	0.0053	100.552	7.482
CNAAC216B	C	C2	3	2	96.824	7.284	0.089	16	M[A,L]WB	0.0056	97.943	7.368
CNAAC217B	C	C2	3	2	94.550	7.314	0.089	16	M[A,L]WT/M[A,L]WB	0.0056	95.428	7.382
CNAAC218B	C	C2	3	2	94.007	7.397	0.089	16	M[A,L]GM	0.0055	94.648	7.447

	Strength [ksi]	Modulus [Msi]
Average	97.894	7.545
Standard Dev.	2.947	0.139
Coeff. of Var. [%]	3.017	1.847
Min.	93.786	7.284
Max.	104.861	7.803
Number of Spec.	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0055	97.360	7.520
Standard $Dev._{norm}$		2.511	0.104
Coeff. of Var. $[\%]_{norm}$		2.579	1.377
Min.	0.0053	93.072	7.300
Max.	0.0056	100.788	7.674
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
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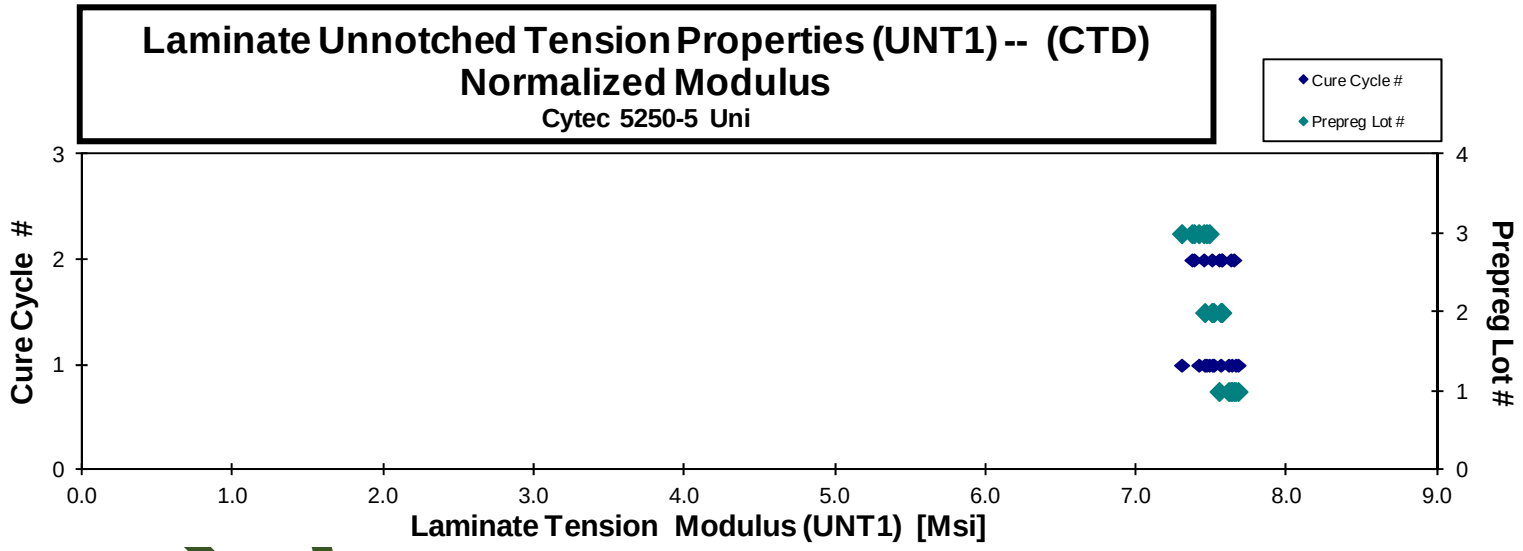
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Tension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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0.0
1.0
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6.0
7.0
8.0
9.0
Laminate Tension Modulus (UNT1) [Msi]

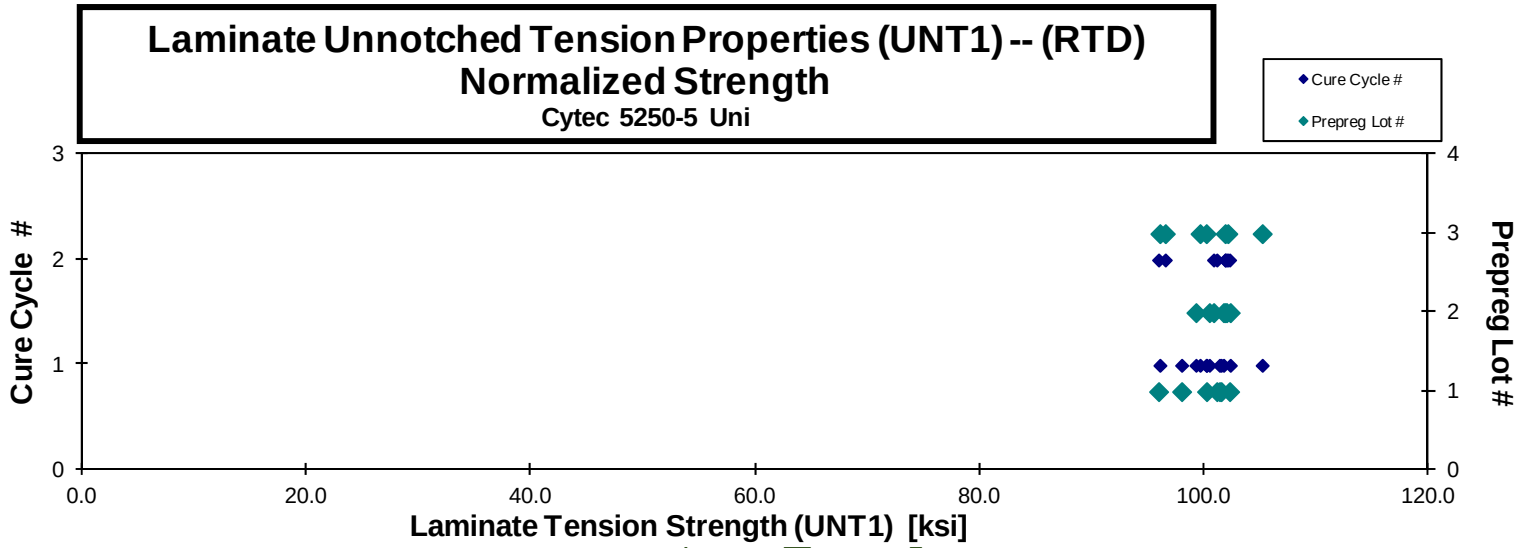
Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAAA111A	A	C1	1	1	102.231	6.911	0.087	16	MGM	0.0055	101.457	6.859
CNAAA112A	A	C1	1	1	100.353	7.822	0.088	16	MGM	0.0055	100.163	7.808
CNAAA113A	A	C1	1	1	95.430	7.499	0.090	16	MGM	0.0056	97.942	7.697
CNAAA114A	A	C1	1	1	100.443	7.641	0.089	16	MGM	0.0055	101.318	7.708
CNAAA211A	A	C2	1	2	104.630	7.916	0.085	16	MGM	0.0053	101.083	7.647
CNAAA212A	A	C2	1	2	97.893	7.812	0.086	16	MGM	0.0054	95.890	7.652
CNAAA213A	A	C2	1	2	103.216	7.596	0.087	16	MGM	0.0054	102.219	7.523
CNAAB111A	B	C1	2	1	102.106	7.555	0.088	16	MGM	0.0055	101.680	7.524
CNAAB112A	B	C1	2	1	102.433	7.630	0.088	16	MGM	0.0055	102.278	7.618
CNAAB113A	B	C1	2	1	99.424	7.520	0.088	16	MGM	0.0055	99.217	7.504
CNAAB114A	B	C1	2	1	100.168	7.507	0.088	16	MWB	0.0055	100.415	7.526
CNAAB211A	B	C2	2	2	104.793	7.702	0.086	16	MGM	0.0053	101.816	7.483
CNAAB212A	B	C2	2	2	102.973	7.581	0.086	16	MGM	0.0054	100.789	7.420
CNAAB213A	B	C2	2	2	103.241	7.585	0.087	16	MWT/MWB	0.0054	101.951	7.491
CNAAC111A	C	C1	3	1	108.916	7.697	0.085	16	MGM	0.0053	105.121	7.428
CNAAC112A	C	C1	3	1	98.031	7.569	0.086	16	MWT	0.0054	96.007	7.412
CNAAC113A	C	C1	3	1	101.235	7.525	0.087	16	MGM	0.0054	99.586	7.403
CNAAC114A	C	C1	3	1	101.150	7.442	0.087	16	MGM	0.0054	100.135	7.367
CNAAC211A	C	C2	3	2	102.020	7.540	0.088	16	MWB	0.0055	102.059	7.543
CNAAC212A	C	C2	3	2	95.743	7.351	0.089	16	MWT	0.0055	96.487	7.408
CNAAC213A	C	C2	3	2	101.172	7.478	0.089	16	MWB	0.0055	101.824	7.526

Average	101.314	7.566	
Standard Dev.	3.074	0.201	
Coeff. of Var. [%]	3.034	2.653	
Min.	95.430	6.911	
Max.	108.916	7.916	
Number of Spec.	21	21	

$Average_{norm}$	0.0055	100.449	7.502
Standard $Dev._{norm}$		2.298	0.188
Coeff. of Var. $[\%]_{norm}$		2.288	2.503
Min.	0.0053	95.890	6.859
Max.	0.0056	105.121	7.808
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
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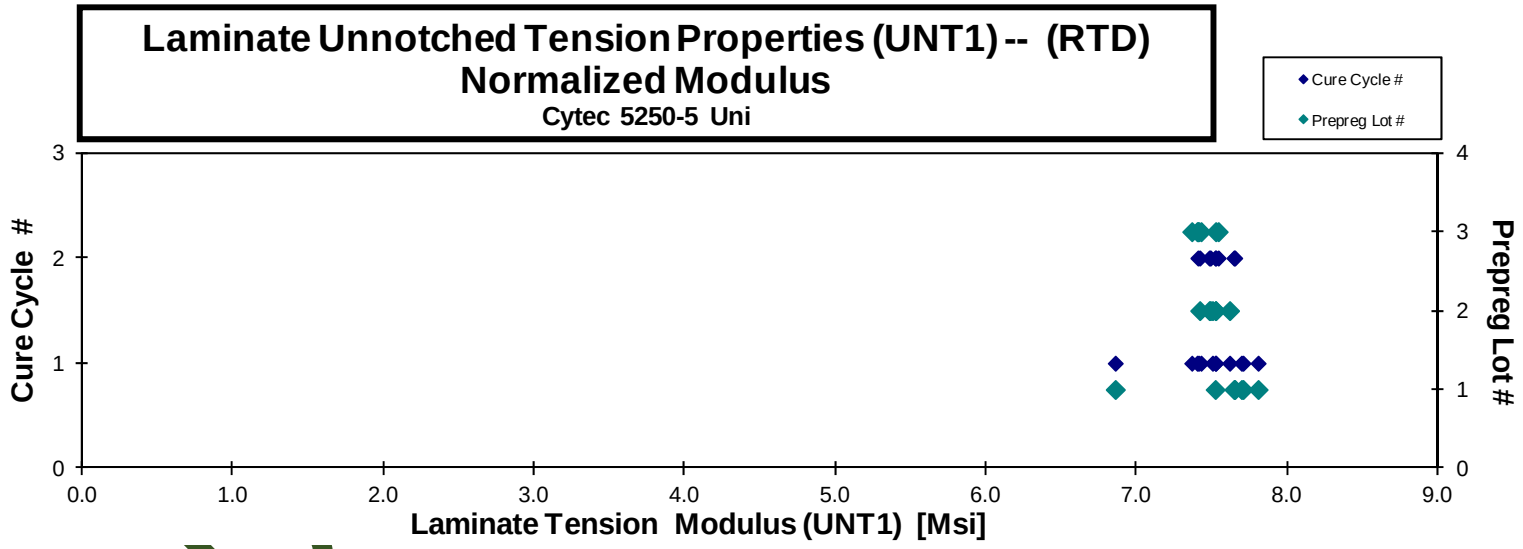
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Tension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Laminate Tension Modulus (UNT1) [Msi]

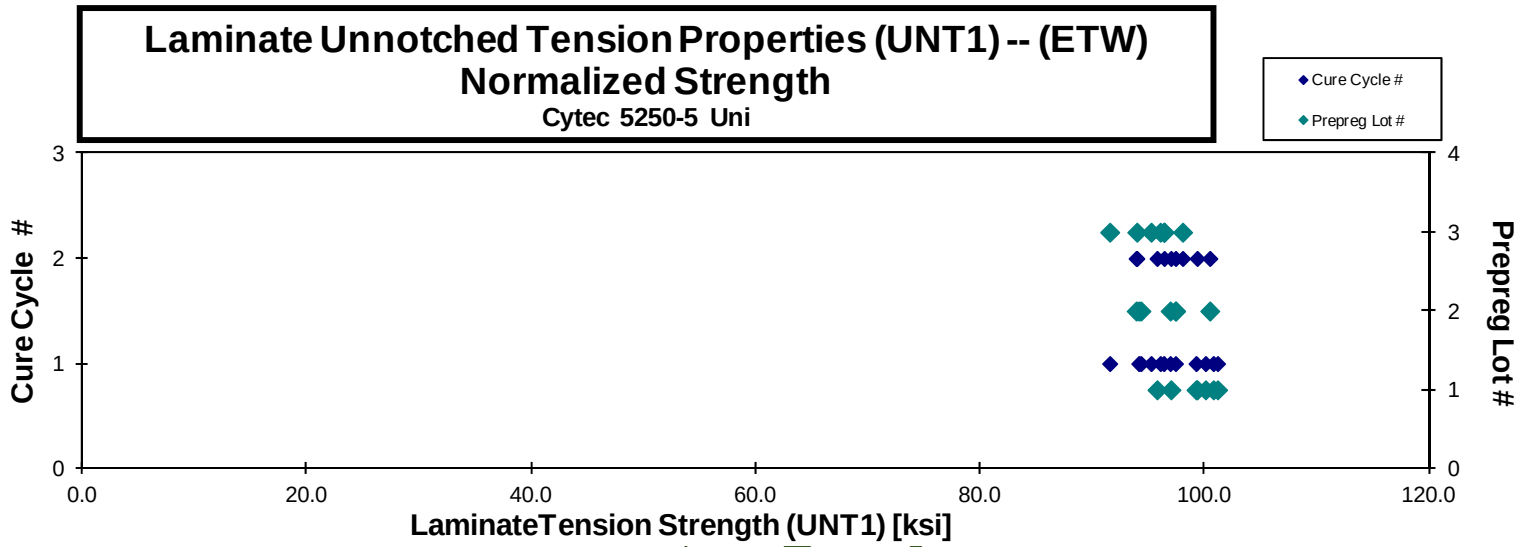
Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAAA11BJ	A	C1	1	1	99.625	7.412	0.088	16	MGM	0.0055	99.228	7.382
CNAAA11CJ	A	C1	1	1	99.822	7.609	0.088	16	MGM	0.0055	100.068	7.628
CNAAA11DJ	A	C1	1	1	101.933	7.695	0.087	16	MGM	0.0055	101.142	7.635
CNAAA11EJ	A	C1	1	1	100.930	7.293	0.088	16	MGM	0.0055	100.758	7.281
CNAAA21BJ	A	C2	1	2	98.472	7.291	0.086	16	MGM	0.0053	95.749	7.089
CNAAA21CJ	A	C2	1	2	99.147	7.533	0.086	16	MGM	0.0054	96.988	7.369
CNAAA21DJ	A	C2	1	2	101.159	7.298	0.086	16	MGM	0.0054	99.320	7.166
CNAAB11BJ	B	C1	2	1	97.886	7.188	0.087	16	MGM	0.0054	96.922	7.117
CNAAB11CJ	B	C1	2	1	98.135	7.253	0.087	16	AGM	0.0055	97.392	7.198
CNAAB11DJ	B	C1	2	1	94.922	7.214	0.087	16	AGM	0.0055	94.310	7.167
CNAAB11EJ	B	C1	2	1	94.624	7.360	0.088	16	AGM	0.0055	94.122	7.321
CNAAB21BJ	B	C2	2	2	96.168	7.131	0.086	16	MGM	0.0054	93.891	6.962
CNAAB21CJ	B	C2	2	2	99.086	6.909	0.087	16	AWT / DGM / AWB	0.0054	97.397	6.791
CNAAB21DJ	B	C2	2	2	101.567	7.269	0.087	16	MGM	0.0054	100.451	7.189
CNAAC11BJ	C	C1	3	1	97.495	7.262	0.087	16	AGM	0.0054	96.037	7.154
CNAAC11CJ	C	C1	3	1	96.549	7.299	0.087	16	AGM	0.0054	95.214	7.198
CNAAC11DJ	C	C1	3	1	93.012	7.143	0.087	16	AGM	0.0054	91.533	7.030
CNAAC11EJ	C	C1	3	1	97.973	7.134	0.087	16	AGM	0.0054	96.341	7.015
CNAAC21BJ	C	C2	3	2	94.485	7.305	0.088	16	AGM	0.0055	93.949	7.264
CNAAC21CJ	C	C2	3	2	97.970	7.106	0.088	16	AGM	0.0055	98.026	7.110
CNAAC21DJ	C	C2	3	2	96.275	7.280	0.088	16	MGM	0.0055	96.384	7.289

Average	97.964	7.285	
Standard Dev.	2.472	0.175	
Coeff. of Var. [%]	2.524	2.405	
Min.	93.012	6.909	
Max.	101.933	7.695	
Number of Spec.	21	21	

$Average_{norm}$	0.0054	96.915	7.207
$Standard\ Dev._{norm}$		2.599	0.198
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.681	2.749
Min.	0.0053	91.533	6.791
Max.	0.0055	101.142	7.635
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
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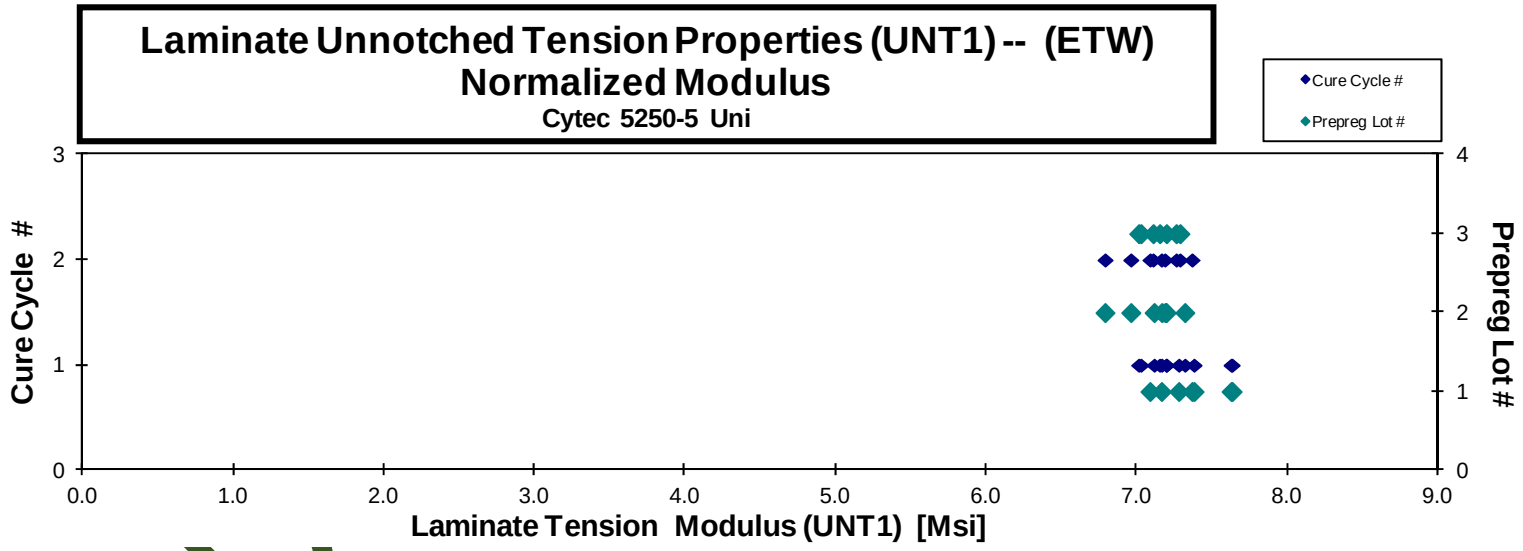
0.0
20.0
40.0
60.0
80.0
100.0
120.0
LaminateTension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
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4
0.0
1.0
2.0
3.0
4.0
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6.0
7.0
8.0
9.0
Laminate Tension Modulus (UNT1) [Msi]

4.8 "10/80/10" Unnotched Tension 2 Properties (UNT2)

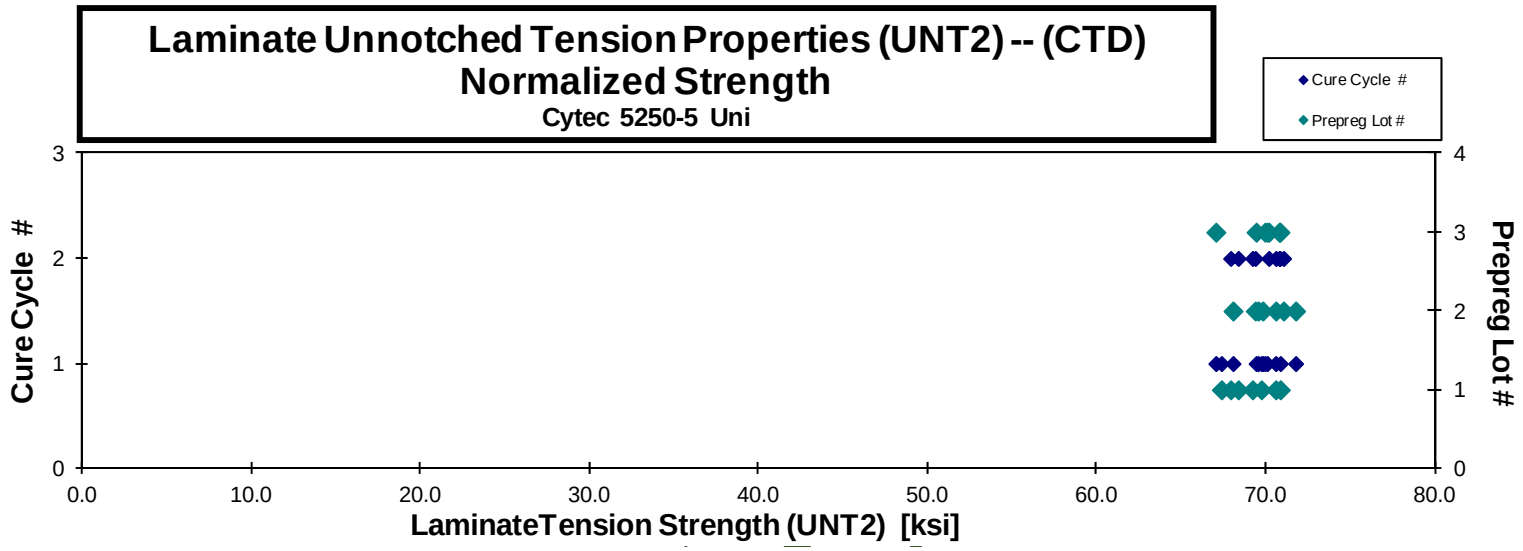
Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNABA116B	A	C1	1	1	70.731	4.953	0.110	20	M[A,L]GM	0.0055	70.849	4.961
CNABA117B	A	C1	1	1	69.472	5.063	0.110	20	M[A,L]WB	0.0055	69.724	5.082
CNABA118B	A	C1	1	1	70.042	5.136	0.111	20	M[A,L]GM	0.0055	70.573	5.175
CNABA119B	A	C1	1	1	69.335	5.300	0.107	20	M[A,L]WB	0.0053	67.360	5.149
CNABA216B	A	C2	1	2	69.591	5.093	0.108	20	M[A,L]GM	0.0054	68.357	5.003
CNABA217B	A	C2	1	2	69.176	5.217	0.108	20	M[A,L]GM	0.0054	67.908	5.121
CNABA218B	A	C2	1	2	70.494	5.282	0.108	20	M[A,L]GM	0.0054	69.201	5.185
CNABB116B	B	C1	2	1	70.978	5.047	0.111	20	M[A,L]GM	0.0056	71.752	5.102
CNABB117B	B	C1	2	1	69.345	4.928	0.111	20	M[A,L]GM	0.0055	69.808	4.961
CNABB118B	B	C1	2	1	67.618	4.907	0.111	20	M[A,L]WB	0.0055	68.048	4.938
CNABB119B	B	C1	2	1	72.757	5.318	0.105	20	M[A,L]GM	0.0053	69.538	5.083
CNABB216B	B	C2	2	2	72.395	4.979	0.108	20	M[A,L]GM	0.0054	71.035	4.885
CNABB217B	B	C2	2	2	70.672	5.161	0.108	20	M[A,L]WB	0.0054	69.365	5.066
CNABB218B	B	C2	2	2	71.725	5.002	0.108	20	AGM	0.0054	70.584	4.923
CNABC116B	C	C1	3	1	69.699	4.940	0.110	20	MWT	0.0055	69.414	4.920
CNABC117B	C	C1	3	1	70.334	4.917	0.110	20	M[A,L]GM	0.0055	70.068	4.898
CNABC118B	C	C1	3	1	67.442	4.958	0.109	20	M[A,L]WT	0.0055	67.033	4.928
CNABC119B	C	C1	3	1	71.802	5.130	0.107	20	MWB	0.0054	69.942	4.997
CNABC216B	C	C2	3	2	70.879	4.970	0.110	20	M[A,L]WT	0.0055	70.825	4.966
CNABC217B	C	C2	3	2	70.186	4.950	0.110	20	M[A,L]GM	0.0055	70.165	4.949
CNABC218B	C	C2	3	2	70.783	4.872	0.110	20	M[A,L]GM	0.0055	70.783	4.872

Average	**70.260**	**5.054**	
Standard Dev.	**1.345**	**0.138**	
Coeff. of Var. [%]	**1.914**	**2.737**	
Min.	**67.442**	**4.872**	
Max.	**72.757**	**5.318**	
Number of Spec.	**21**	**21**	

$Average_{norm}$	**0.0055**	**69.635**	**5.008**
Standard $Dev._{norm}$		**1.273**	**0.099**
Coeff. of Var. $[\%]_{norm}$		**1.829**	**1.981**
Min.	**0.0053**	**67.033**	**4.872**
Max.	**0.0056**	**71.752**	**5.185**
Number of Spec.		**21**	**21**


Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
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0.0
10.0
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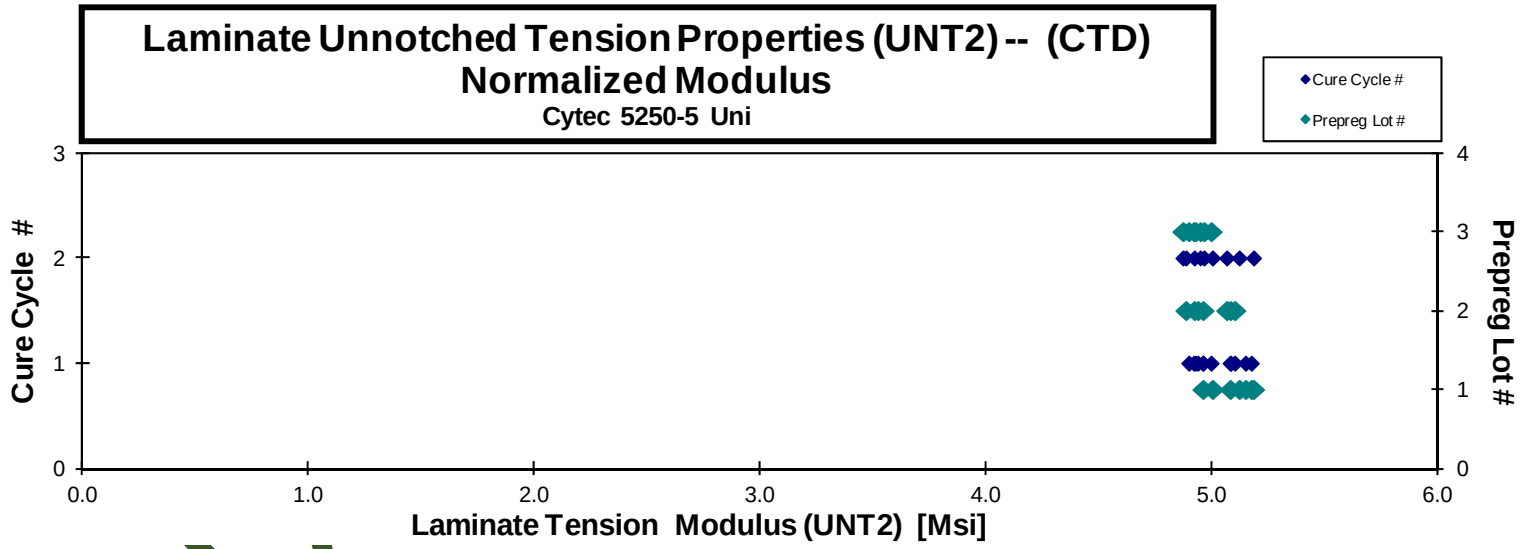
30.0
40.0
50.0
60.0
70.0
80.0
LaminateTension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
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4
0.0
1.0
2.0
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5.0
6.0
Laminate Tension Modulus (UNT2) [Msi]

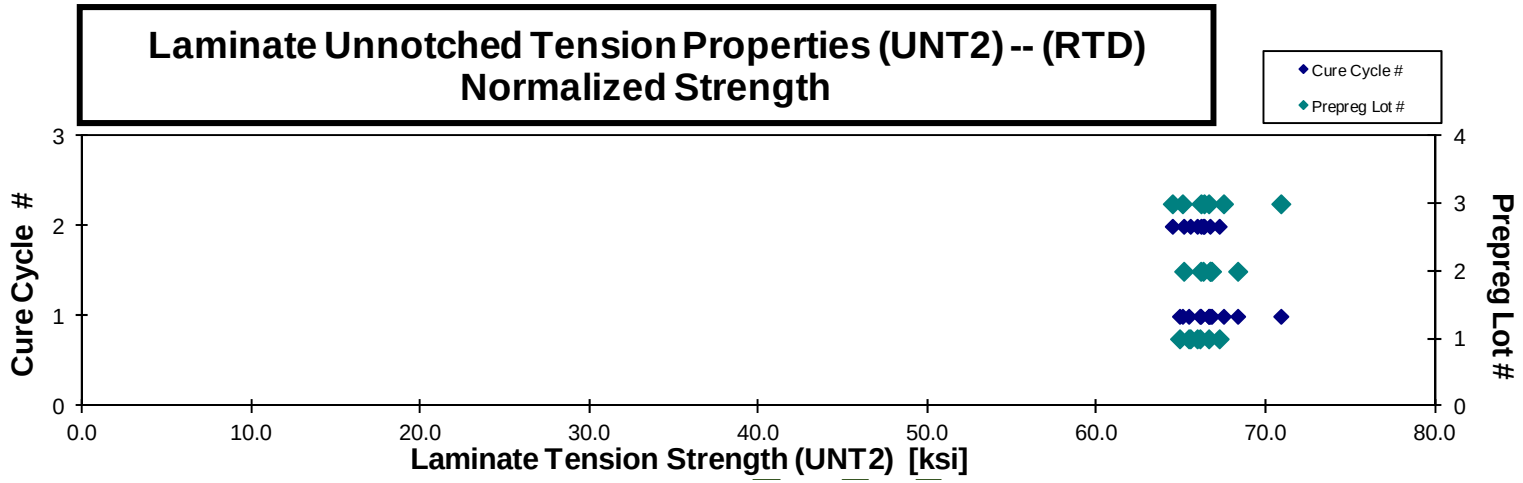
Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNABA111A	A	C1	1	1	67.353	5.095	0.107	20	MGM / DGM	0.0053	65.424	4.949
CNABA112A	A	C1	1	1	67.864	4.879	0.108	20	MGM / DGM	0.0054	66.610	4.788
CNABA113A	A	C1	1	1	65.021	4.879	0.110	20	MGM / DGM	0.0055	64.883	4.868
CNABA114A	A	C1	1	1	65.729	4.828	0.111	20	MWT / DWT	0.0055	66.088	4.854
CNABA212A	A	C2	1	2	69.176	5.104	0.105	20	MGM	0.0052	65.926	4.865
CNABA213A	A	C2	1	2	68.277	5.129	0.106	20	MGM	0.0053	65.515	4.921
CNABA214A	A	C2	1	2	69.102	5.180	0.107	20	MGM/DGM	0.0054	67.228	5.040
CNABB111A	B	C1	2	1	69.882	5.091	0.105	20	MGM	0.0053	66.780	4.865
CNABB112A	B	C1	2	1	67.204	4.861	0.108	20	MGM	0.0054	66.135	4.784
CNABB113A	B	C1	2	1	66.345	4.871	0.111	20	MGM	0.0055	66.697	4.896
CNABB114A	B	C1	2	1	67.515	4.711	0.111	20	MGM	0.0056	68.323	4.768
CNABB211A	B	C2	2	2	70.065	5.153	0.102	20	MGM	0.0051	65.129	4.790
CNABB212A	B	C2	2	2	69.704	4.977	0.105	20	MGM	0.0053	66.683	4.761
CNABB213A	B	C2	2	2	68.072	4.801	0.107	20	MGM	0.0054	66.278	4.674
CNABC111A	C	C1	3	1	68.153	5.188	0.108	20	MWT	0.0054	66.604	5.070
CNABC112A	C	C1	3	1	71.558	4.996	0.109	20	MGM	0.0054	70.875	4.948
CNABC113A	C	C1	3	1	65.264	4.813	0.110	20	MGM	0.0055	65.056	4.798
CNABC114A	C	C1	3	1	67.822	4.751	0.109	20	MGM	0.0055	67.483	4.727
CNABC211A	C	C2	3	2	64.547	4.806	0.110	20	MGM	0.0055	64.459	4.799
CNABC212A	C	C2	3	2	67.902	4.935	0.107	20	MGM	0.0054	66.328	4.821
CNABC213A	C	C2	3	2	67.395	4.883	0.108	20	MGM	0.0054	66.149	4.793

Average	67.807	4.949	
Standard Dev.	1.777	0.151	
Coeff. of Var. [%]	2.621	3.042	
Min.	64.547	4.711	
Max.	71.558	5.188	
Number of Spec.	21	21	

$Average_{norm}$	0.0054	66.412	4.847
Standard $Dev._{norm}$		1.373	0.098
Coeff. of Var. $[\%]_{norm}$		2.067	2.031
Min.	0.0051	64.459	4.674
Max.	0.0056	70.875	5.070
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Normalized Strength
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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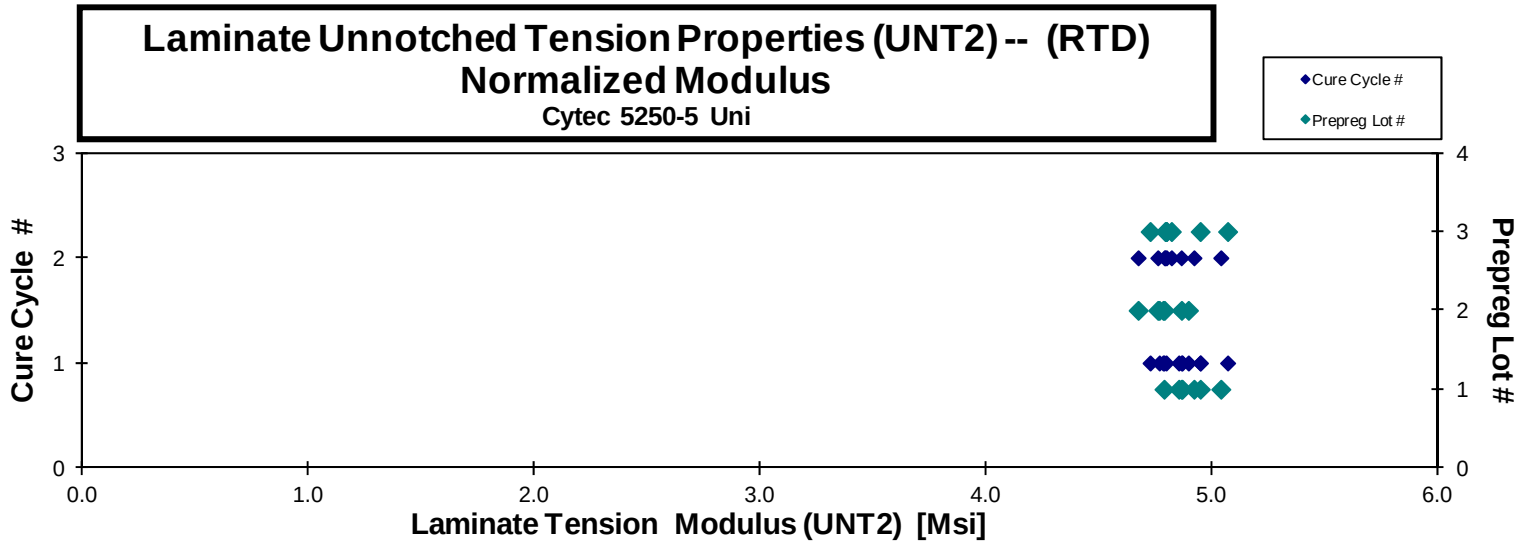
50.0
60.0
70.0
80.0
Laminate Tension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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0.0
1.0
2.0
3.0
4.0
5.0
6.0
Laminate Tension Modulus (UNT2) [Msi]

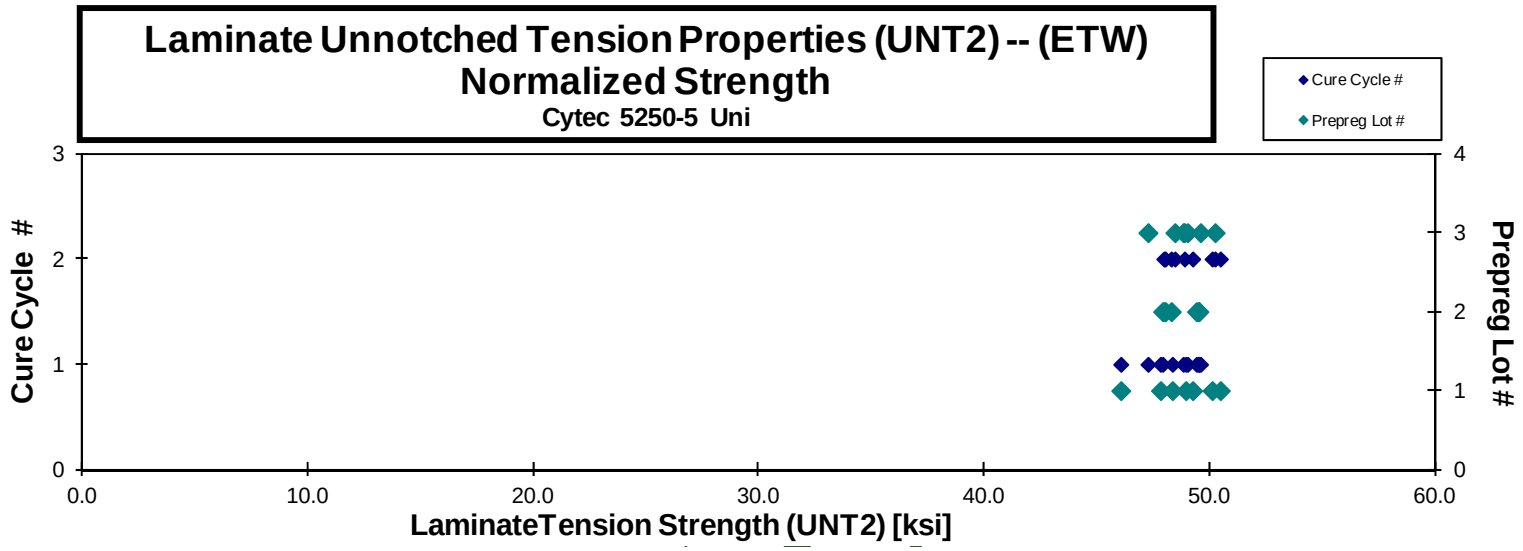
Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNABA11BJ	A	C1	1	1	49.305	3.960	0.109	20	DGM/AGM	0.0055	48.939	3.930
CNABA11CJ	A	C1	1	1	48.198	3.776	0.110	20	DGM/AGM	0.0055	48.344	3.787
CNABA11DJ	A	C1	1	1	47.898	3.731	0.110	20	DGM/AGM	0.0055	47.819	3.725
CNABA11EJ	A	C1	1	1	46.140	3.843	0.110	20	DGM/AGM	0.0055	46.056	3.836
CNABA21BJ	A	C2	1	2	50.902	4.015	0.106	20	DGM/AGM	0.0053	49.244	3.884
CNABA21CJ	A	C2	1	2	51.099	4.028	0.108	20	DGM/AGM	0.0054	50.108	3.950
CNABA21DJ	A	C2	1	2	51.322	3.938	0.108	20	DGM/AGM	0.0054	50.475	3.873
CNABB11BJ	B	C1	2	1	47.691	3.618	0.111	20	DGM/AGM	0.0055	47.915	3.635
CNABB11CJ	B	C1	2	1	48.996	3.851	0.111	20	DGM/AGM	0.0056	49.515	3.892
CNABB11DJ	B	C1	2	1	49.067	3.708	0.111	20	DGM/AGM	0.0056	49.513	3.741
CNABB11EJ	B	C1	2	1	49.110	3.768	0.111	20	DGM/AGM/AWT	0.0055	49.415	3.791
CNABB21BJ	B	C2	2	2	48.950	3.845	0.108	20	AGM/DGM	0.0054	48.030	3.773
CNABB21CJ	B	C2	2	2	48.541	3.977	0.109	20	AGM/DGM	0.0054	47.968	3.930
CNABB21DJ	B	C2	2	2	48.822	4.067	0.109	20	AGM/DGM	0.0054	48.297	4.023
CNABC11BJ	C	C1	3	1	47.601	3.686	0.109	20	DGM/AGM	0.0055	47.262	3.660
CNABC11CJ	C	C1	3	1	49.107	3.625	0.109	20	DGM/AGM	0.0055	48.825	3.605
CNABC11DJ	C	C1	3	1	49.905	3.699	0.109	20	DGM/AGM	0.0055	49.595	3.676
CNABC11EJ	C	C1	3	1	49.336	3.742	0.109	20	DGM/AGM	0.0055	49.022	3.718
CNABC21BJ	C	C2	3	2	49.796	3.994	0.108	20	DGM/AGM	0.0054	48.883	3.921
CNABC21CJ	C	C2	3	2	48.753	3.814	0.109	20	DGM/AGM	0.0055	48.458	3.791
CNABC21DJ	C	C2	3	2	50.272	3.622	0.110	20	DGM/AGM	0.0055	50.241	3.620

	Strength [ksi]	Modulus [Msi]
Average	49.086	3.824
Standard Dev.	1.236	0.144
Coeff. of Var. [%]	2.519	3.764
Min.	46.140	3.618
Max.	51.322	4.067
Number of Spec.	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
Average$_{norm}$	0.0055	48.758	3.798
Standard Dev.$_{norm}$		1.057	0.121
Coeff. of Var. [%]$_{norm}$		2.169	3.185
Min.	0.0053	46.056	3.605
Max.	0.0056	50.475	4.023
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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10.0
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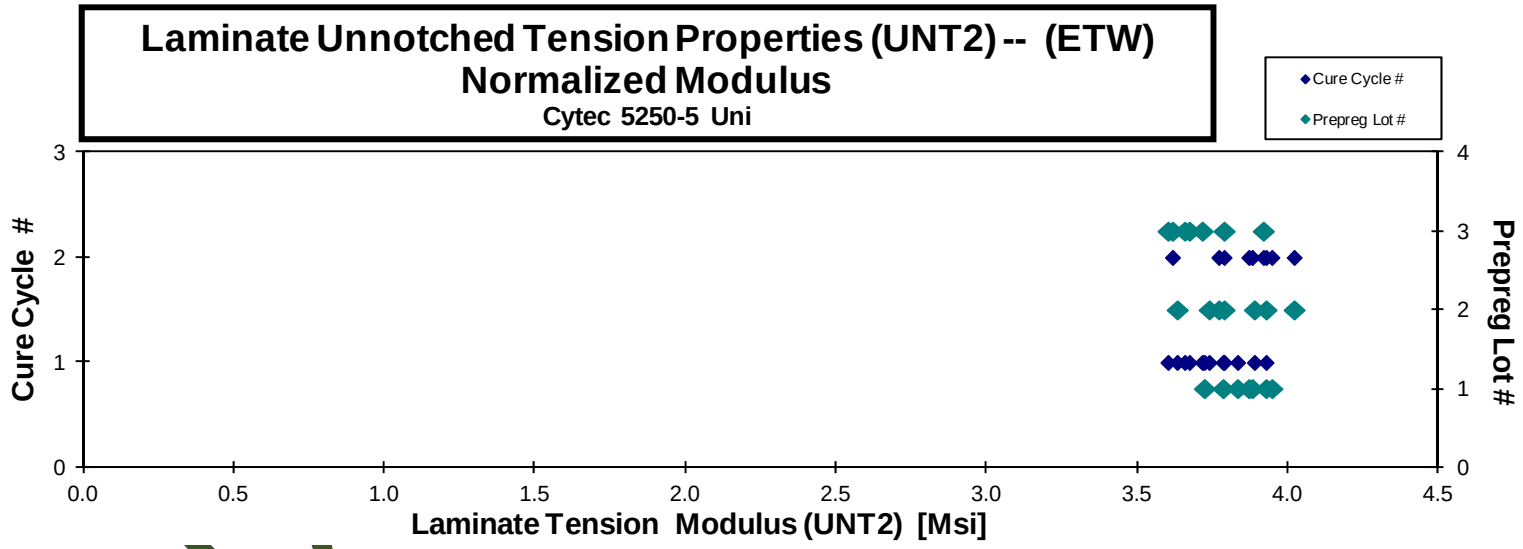
30.0
40.0
50.0
60.0
LaminateTension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Laminate Tension Modulus (UNT2) [Msi]

4.9 "50/40/10" Unnotched Tension 3 Properties (UNT3)

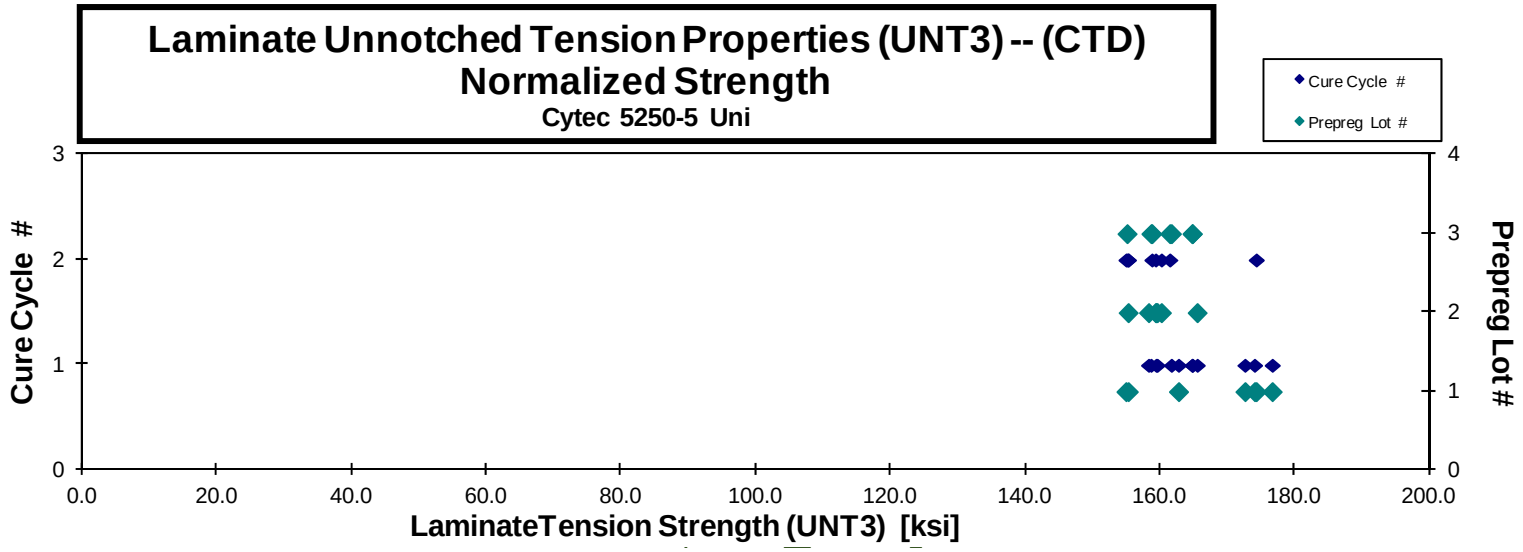
Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Strength & Modulus
Cytec 5250-5 Uni

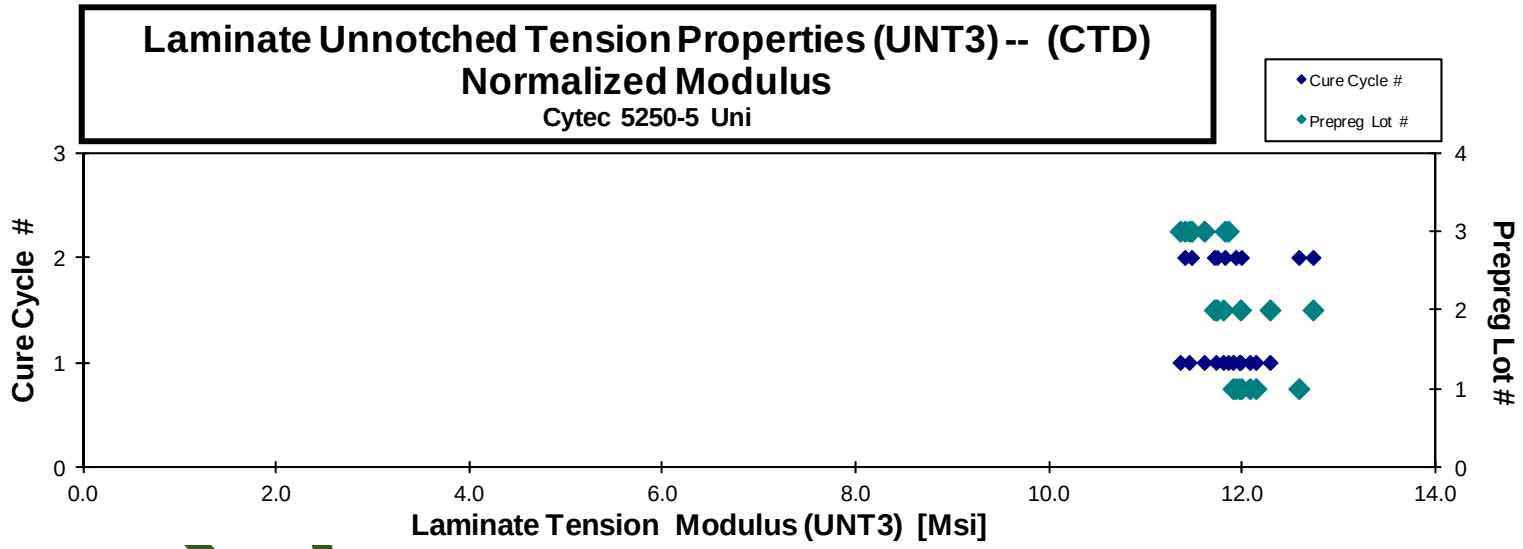
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNACA116B	A	C1	1	1	172.535	12.074	0.110	20	AWT / MWB	0.0055	172.640	12.082
CNACA117B	A	C1	1	1	174.040	11.970	0.110	20	MGM	0.0055	174.067	11.972
CNACA118B	A	C1	1	1	177.442	12.196	0.110	20	MWT/MAB	0.0055	176.690	12.144
CNACA119B	A	C1	1	1	165.507	12.108	0.108	20	MAT/MWB	0.0054	162.774	11.908
CNACA216B	A	C2	1	2	152.979	12.427	0.111	20	MGM/MAB	0.0056	154.972	12.589
CNACA217B	A	C2	1	2	171.689	11.757	0.112	20	MGM	0.0056	174.316	11.936
CNACA218B	A	C2	1	2	153.405	11.848	0.111	20	MWT/MWB	0.0056	155.311	11.995
CNACB116B	B	C1	2	1	159.271	12.278	0.110	20	MWT/AWB	0.0055	159.440	12.291
CNACB117B	B	C1	2	1	165.922	12.013	0.110	20	MAT/MWB	0.0055	165.545	11.986
CNACB118B	B	C1	2	1	158.094	11.696	0.111	20	MAT/MAB	0.0056	159.604	11.807
CNACB119B	B	C1	2	1	160.862	11.920	0.108	20	MAT/MAB	0.0054	158.328	11.732
CNACB216B	B	C2	2	2	161.199	11.878	0.109	20	MAB	0.0054	159.368	11.743
CNACB217B	B	C2	2	2	161.696	12.853	0.109	20	MAB	0.0055	160.226	12.736
CNACB218B	B	C2	2	2	156.916	11.836	0.109	20	MWB	0.0054	155.300	11.714
CNACC116B	C	C1	3	1	163.148	11.461	0.109	20	MWT	0.0055	161.715	11.361
CNACC117B	C	C1	3	1	166.314	11.967	0.109	20	MWT/MGM	0.0055	164.802	11.859
CNACC118B	C	C1	3	1	165.739	11.676	0.109	20	MGT/MGM	0.0055	164.810	11.610
CNACC119B	C	C1	3	1	164.904	11.903	0.106	20	MGM	0.0053	158.682	11.454
CNACC216B	C	C2	3	2	164.441	12.041	0.108	20	MAT/MAB	0.0054	161.476	11.824
CNACC217B	C	C2	3	2	161.811	11.624	0.108	20	MGM	0.0054	158.820	11.409
CNACC218B	C	C2	3	2	157.736	11.671	0.108	20	MGM	0.0054	155.131	11.478

	Strength	Modulus
Average	163.602	11.962
Standard Dev.	6.459	0.308
Coeff. of Var. [%]	3.948	2.572
Min.	152.979	11.461
Max.	177.442	12.853
Number of Spec.	21	21

	Avg. t_{ply}	$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0055	162.572	11.887
$Standard\ Dev._{norm}$		6.678	0.356
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.108	2.995
Min.	0.0053	154.972	11.361
Max.	0.0056	176.690	12.736
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
200.0
LaminateTension Strength (UNT3) [ksi]


Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
Laminate Tension Modulus (UNT3) [Msi]

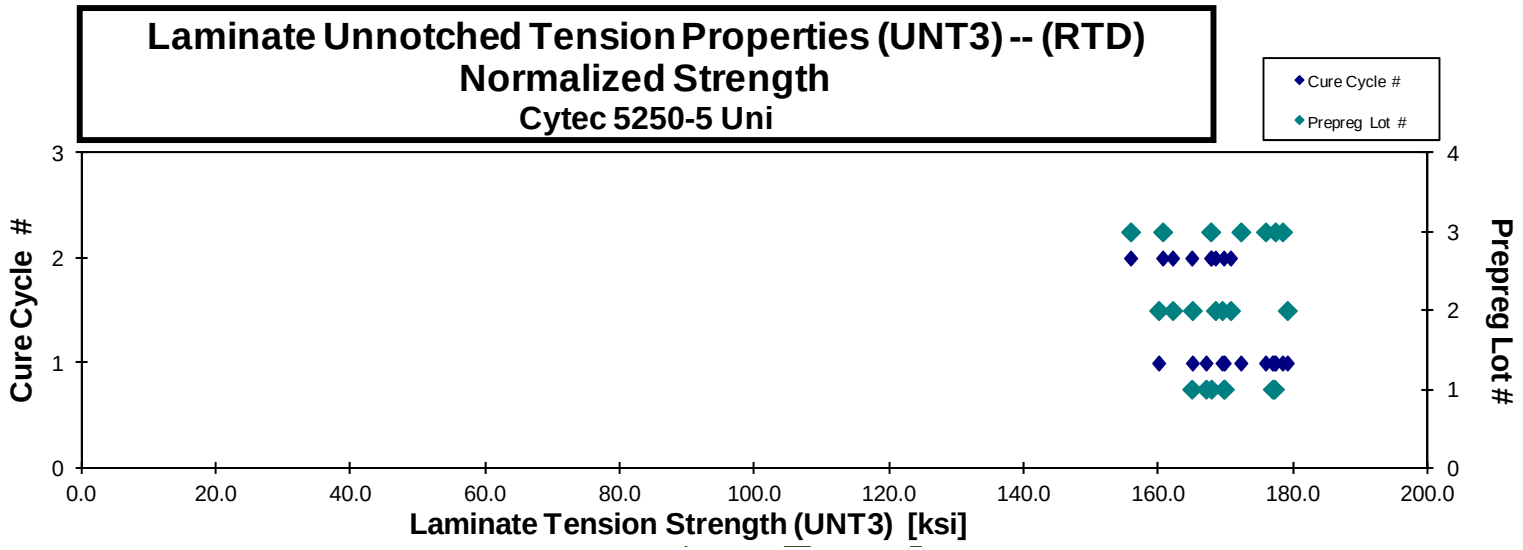
Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNACA111A	A	C1	1	1	170.964	12.204	0.109	20	MGM/MGB	0.0055	169.565	12.104
CNACA112A	A	C1	1	1		12.715	0.110	20		0.0055		12.711
CNACA113A	A	C1	1	1	166.905	12.145	0.110	20	MWT/MWB	0.0055	166.855	12.141
CNACA114A	A	C1	1	1	176.202	11.979	0.111	20	MAT/MWB	0.0055	177.003	12.034
CNACA115A	A	C1	1	1	176.428	12.055	0.110	20	MWT/AWB	0.0055	176.722	12.075
CNACA211A	A	C2	1	2	172.436	11.763	0.108	20	MWT/MWB	0.0054	169.483	11.561
CNACA212A	A	C2	1	2	160.936	11.636	0.113	20	MWB	0.0056	164.740	11.911
CNACA213A	A	C2	1	2	167.022	11.924	0.110	20	MGM/LAT	0.0055	167.630	11.967
CNACB111A	B	C1	2	1	158.859	11.876	0.111	20	MAT/LAB	0.0055	159.821	11.948
CNACB112A	B	C1	2	1	166.446	11.870	0.109	20	MGM	0.0054	164.832	11.755
CNACB113A	B	C1	2	1	179.089	12.172	0.110	20	LAT	0.0055	178.926	12.161
CNACB114A	B	C1	2	1	168.325	11.657	0.111	20	MAT/LAB	0.0055	169.243	11.721
CNACB211A	B	C2	2	2	167.873	12.116	0.106	20	MWT	0.0053	161.895	11.685
CNACB212A	B	C2	2	2	172.080	11.899	0.108	20	MGM	0.0054	168.248	11.634
CNACB213A	B	C2	2	2	172.483	12.169	0.109	20	AWT	0.0054	170.497	12.028
CNACC111A	C	C1	3	1	183.816	11.975	0.107	20	MWT	0.0053	178.218	11.610
CNACC112A	C	C1	3	1	180.592	11.869	0.108	20	MWT/MWB	0.0054	177.145	11.642
CNACC113A	C	C1	3	1	176.983	11.859	0.109	20	MWT/MGB	0.0055	175.696	11.772
CNACC114A	C	C1	3	1	173.608	11.796	0.109	20	MWT/MWB	0.0055	172.029	11.689
CNACC211A	C	C2	3	2	173.518	11.771	0.106	20	MAT/MAB	0.0053	167.550	11.366
CNACC212A	C	C2	3	2	163.238	11.751	0.108	20	MWT	0.0054	160.418	11.548
CNACC213A	C	C2	3	2	158.467	11.886	0.108	20	MGM	0.0054	155.658	11.675

CNACA112A did not fail at test limit (set to load of 20 000lb)

Average	**170.775**	**11.959**	**Average$_{norm}$**	**0.0055**	**169.151**	**11.852**
Standard Dev.	**6.956**	**0.236**	**Standard Dev.$_{norm}$**		**6.561**	**0.293**
Coeff. of Var. [%]	**4.073**	**1.976**	**Coeff. of Var. [%]$_{norm}$**		**3.879**	**2.472**
Min.	**158.467**	**11.636**	**Min.**	**0.0053**	**155.658**	**11.366**
Max.	**183.816**	**12.715**	**Max.**	**0.0056**	**178.926**	**12.711**
Number of Spec.	**21**	**22**	**Number of Spec.**		**21**	**22**


Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
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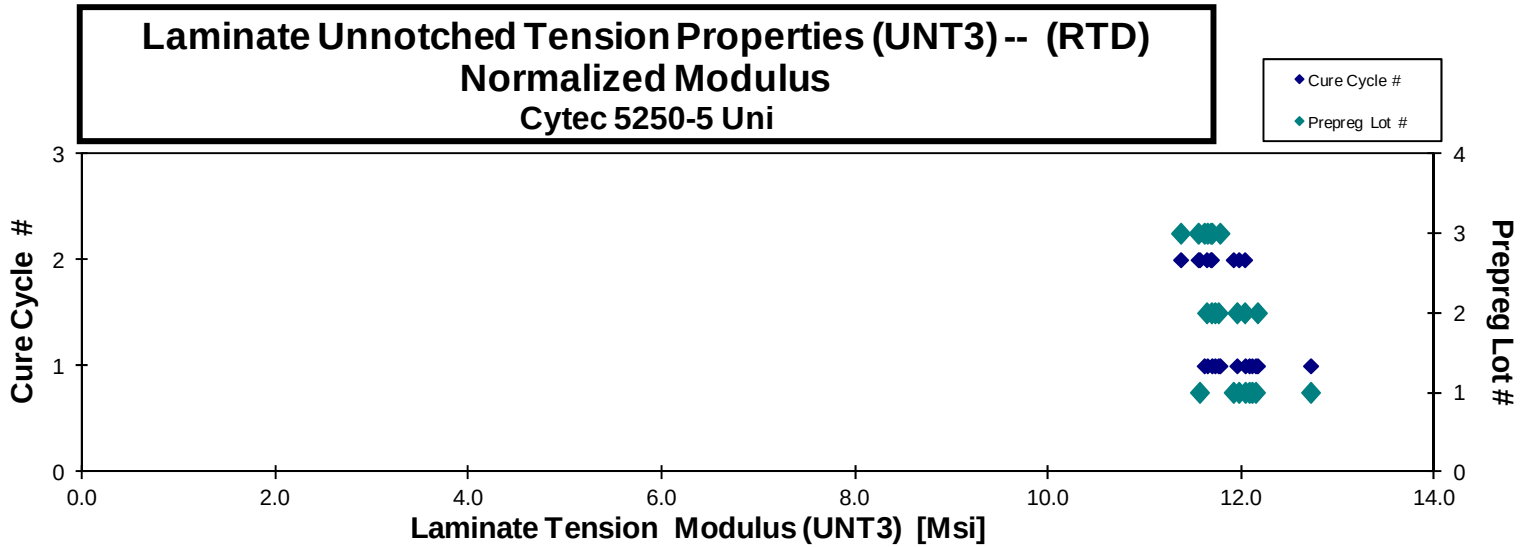
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
200.0
Laminate Tension Strength (UNT3) [ksi]

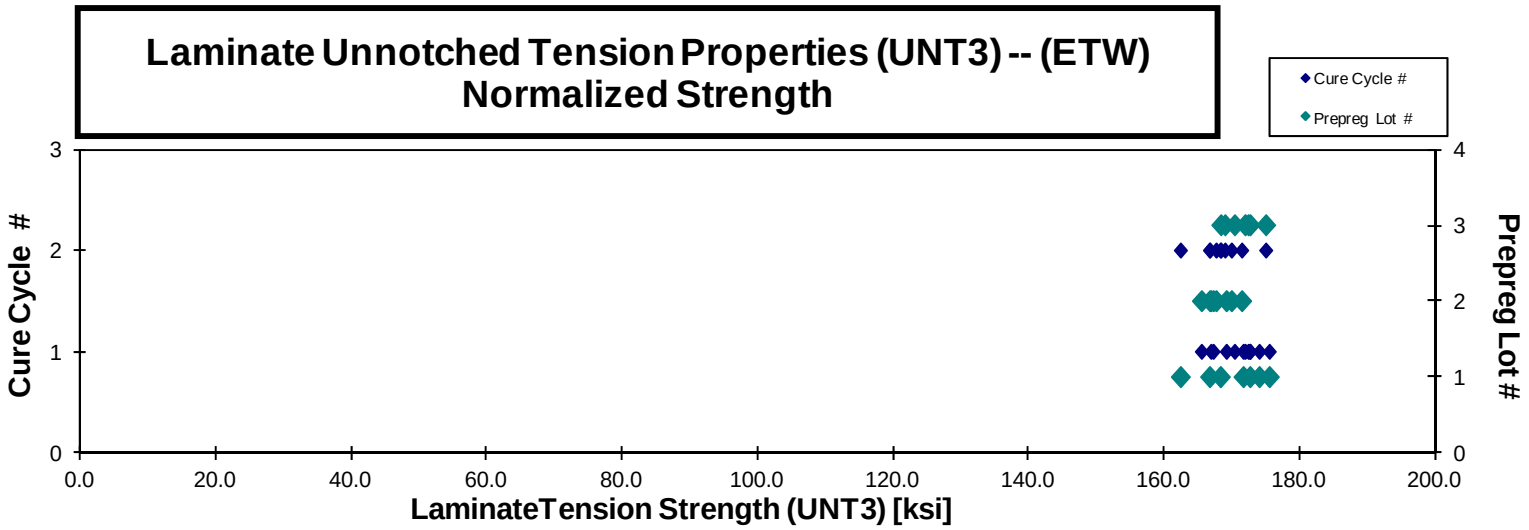

Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
Laminate Tension Modulus (UNT3) [Msi]

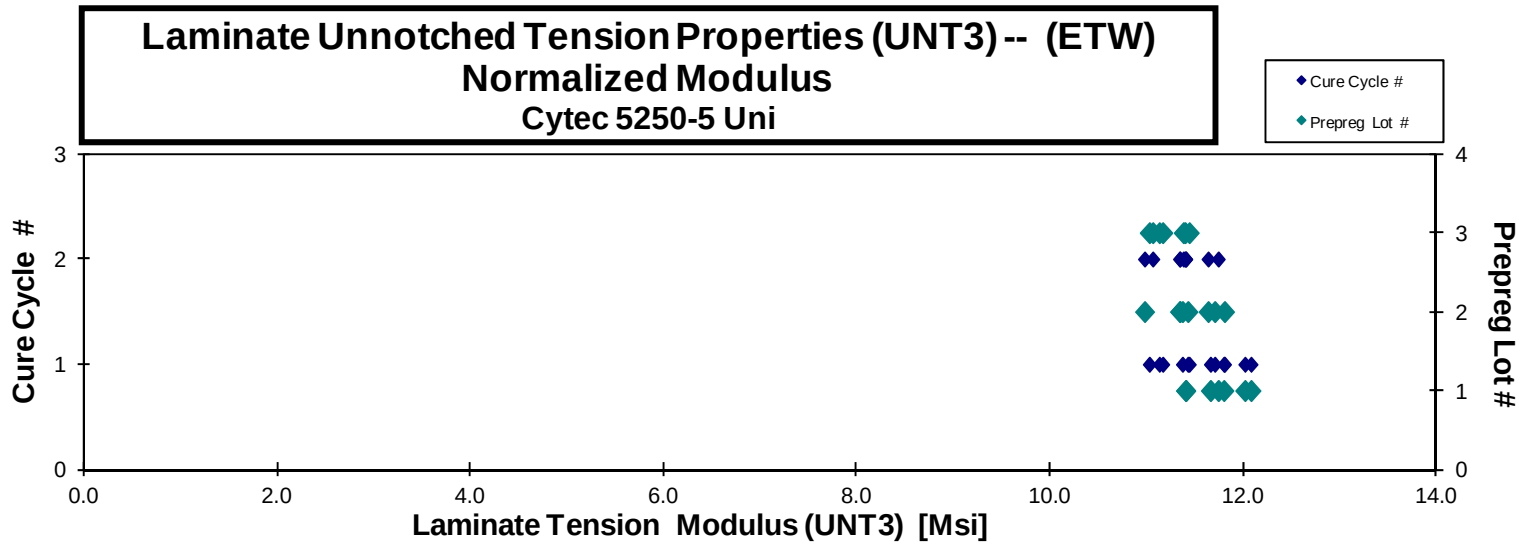
Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNACA11CJ	A	C1	1	1	175.740	11.814	0.110	20	MGM/LWB	0.0055	175.420	11.792
CNACA11DJ	A	C1	1	1	174.083	11.664	0.110	20	LWT/DGM/LAB	0.0055	173.925	11.654
CNACA11EJ	A	C1	1	1	172.346	12.065	0.110	20	LWT/DGM/LAB	0.0055	171.562	12.010
CNACA11FJ	A	C1	1	1	173.060	12.108	0.110	20	LAT/DGM/LWB	0.0055	172.562	12.073
CNACA21BJ	A	C2	1	2	163.343	11.469	0.109	20	AGM/DGM	0.0055	162.304	11.396
CNACA21CJ	A	C2	1	2	165.061	11.293	0.111	20	AGM/DGM	0.0056	166.611	11.399
CNACA21DJ	A	C2	1	2	168.025	11.722	0.110	20	AWB/DGM	0.0055	168.203	11.735
CNACB11BJ	B	C1	2	1	166.040	11.645	0.111	20	LWT/DGM/LWB	0.0055	166.795	11.698
CNACB11CJ	B	C1	2	1	168.615	11.767	0.110	20	LWT/DGM/LWB	0.0055	169.075	11.799
CNACB11DJ	B	C1	2	1	164.779	11.321	0.110	20	LWT/DGM/AWB	0.0055	165.404	11.364
CNACB11EJ	B	C1	2	1	167.286	11.431	0.110	20	LWT/DGM/LWB	0.0055	167.134	11.420
CNACB21BJ	B	C2	2	2	171.434	11.898	0.108	20	MGM	0.0054	167.564	11.630
CNACB21CJ	B	C2	2	2	175.088	11.583	0.108	20	AGM	0.0054	171.347	11.336
CNACB21DJ	B	C2	2	2	172.892	11.170	0.108	20	MGM	0.0054	169.827	10.972
CNACB21EJ	B	C2	2	2	170.260	11.584	0.108	20	AGM/DGM	0.0054	166.622	11.337
CNACC11BJ	C	C1	3	1	174.427	11.607	0.108	20	LWT/DGM/LWB	0.0054	171.837	11.434
CNACC11CJ	C	C1	3	1	174.767	11.319	0.108	20	MGM	0.0054	172.304	11.160
CNACC11DJ	C	C1	3	1	175.986	11.239	0.108	20	LWT/DGM/LWB	0.0054	172.573	11.021
CNACC11EJ	C	C1	3	1	173.818	11.355	0.108	20	LWT/DGM/LWB	0.0054	170.289	11.124
CNACC21BJ	C	C2	3	2	172.874	11.360	0.107	20	MGM	0.0054	168.264	11.057
CNACC21CJ	C	C2	3	2	178.549	11.628	0.108	20	MGM	0.0054	174.897	11.390
CNACC21DJ	C	C2	3	2	173.093	11.658	0.107	20	LGM	0.0054	168.871	11.373

Average	171.435	11.577	$Average_{norm}$	0.0054	169.700	11.463
Standard Dev.	4.164	0.256	$Standard\ Dev._{norm}$		3.303	0.306
Coeff. of Var. [%]	2.429	2.215	$Coeff.\ of\ Var.\ [\%]_{norm}$		1.946	2.666
Min.	163.343	11.170	Min.	0.0054	162.304	10.972
Max.	178.549	12.108	Max.	0.0056	175.420	12.073
Number of Spec.	22	22	Number of Spec.		22	22


Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Normalized Strength
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
200.0
LaminateTension Strength (UNT3) [ksi]


Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
Laminate Tension Modulus (UNT3) [Msi]

4.10 "33/0/67" Unnotched Compression 0 Properties (UNC0)

Laminate Unnotched Compression Properties (UNC0) -- (CTD)
Strength & Modulus
Cytec 5250 - 5 Uni

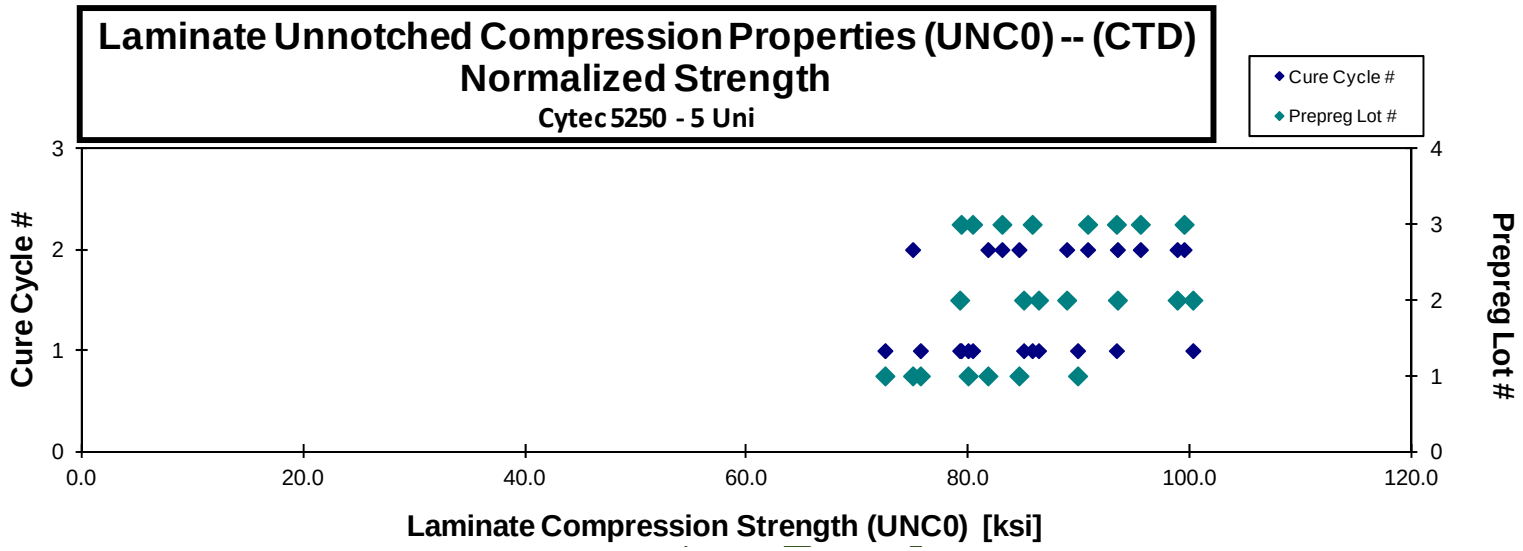
normalizing t_{ply} [in]: 0.0055

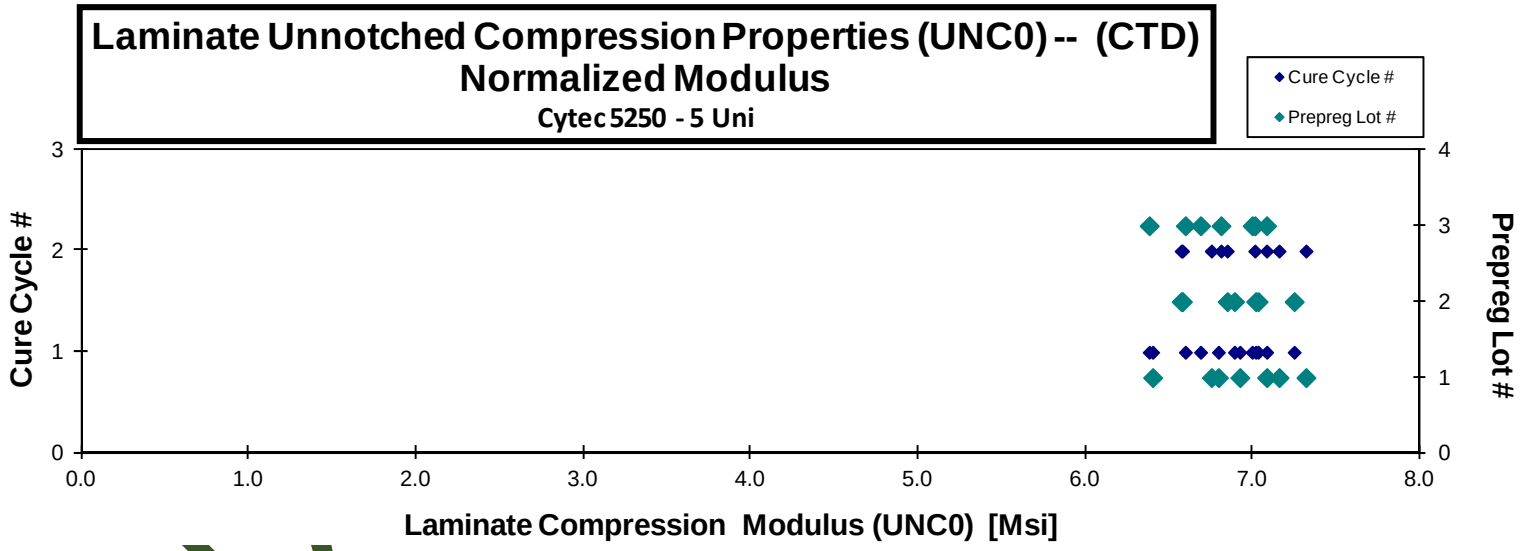
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNARA116B	A	C1	1	1	75.981	6.427	0.115	21	BGM	0.0055	75.663	6.400
CNARA117B	A	C1	1	1	72.865	6.960	0.115	21	BGM	0.0055	72.465	6.922
CNARA118B*	A	C1	1	1	90.263		0.115	21	BAT	0.0055	89.846	
CNARA119B	A	C1	1	1	80.130	7.097	0.115	21	BAT	0.0055	79.969	7.082
CNARA11AB**	A	C1	1	1		6.792	0.116	21	BGM/ HIB	0.0055		6.794
CNARA215B	A	C2	1	2	86.354	7.308	0.113	21	BAT	0.0054	84.559	7.156
CNARA216B	A	C2	1	2	76.227	7.441	0.114	21	BAB	0.0054	74.962	7.317
CNARA217B	A	C2	1	2	82.472	6.810	0.115	21	BAB	0.0055	81.758	6.751
CNARB115B	B	C1	2	1	80.001	7.086	0.114	21	BGM	0.0054	79.216	7.017
CNARB116B	B	C1	2	1	85.486	6.931	0.115	21	BGM	0.0055	84.980	6.890
CNARB117B	B	C1	2	1	86.548	7.266	0.115	21	BGM	0.0055	86.323	7.247
CNARB118B	B	C1	2	1	100.657	7.060	0.115	21	BAT	0.0055	100.250	7.031
CNARB215B	B	C2	2	2	91.901	6.796	0.112	21	BGM	0.0053	88.864	6.572
CNARB216B	B	C2	2	2	101.629	7.040	0.112	21	BGM	0.0053	98.828	6.846
CNARB217B	B	C2	2	2	95.158	6.700	0.113	21	BGM	0.0054	93.441	6.579
CNARC115B	C	C1	3	1	86.611	6.754	0.114	21	BGM	0.0054	85.749	6.687
CNARC116B	C	C1	3	1	94.623	7.091	0.114	21	BAT	0.0054	93.354	6.995
CNARC117B	C	C1	3	1	81.266	6.669	0.114	21	BAB	0.0054	80.375	6.596
CNARC118B	C	C1	3	1	80.136	6.444	0.114	21	BGM	0.0054	79.338	6.380
CNARC215B	C	C2	3	2	91.057	7.105	0.115	21	BAT/HIT	0.0055	90.755	7.082
CNARC216B	C	C2	3	2	95.845	6.833	0.115	21	BAT	0.0055	95.513	6.809
CNARC217B	C	C2	3	2	83.538	7.055	0.115	21	BGM	0.0055	83.019	7.011
CNARC218B*	C	C2	3	2	100.182		0.115	21	BGM	0.0055	99.459	

****Strength is not reported due to bad failure modes**
*** Coupons were not gaged**

Average	87.224	6.936
Standard Dev.	8.384	0.262
Coeff. of Var. [%]	9.612	3.774
Min.	72.865	6.427
Max.	101.629	7.441
Number of Spec.	22	21

$Average_{norm}$	0.0054	86.304	6.865
$Standard\ Dev._{norm}$		8.144	0.261
$Coeff.\ of\ Var.\ [\%]_{norm}$		9.436	3.807
Min.	0.0053	72.465	6.380
Max.	0.0055	100.250	7.317
Number of Spec.		22	21


Laminate Unnotched Compression Properties (UNC0) -- (CTD)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Compression Strength (UNC0) [ksi]

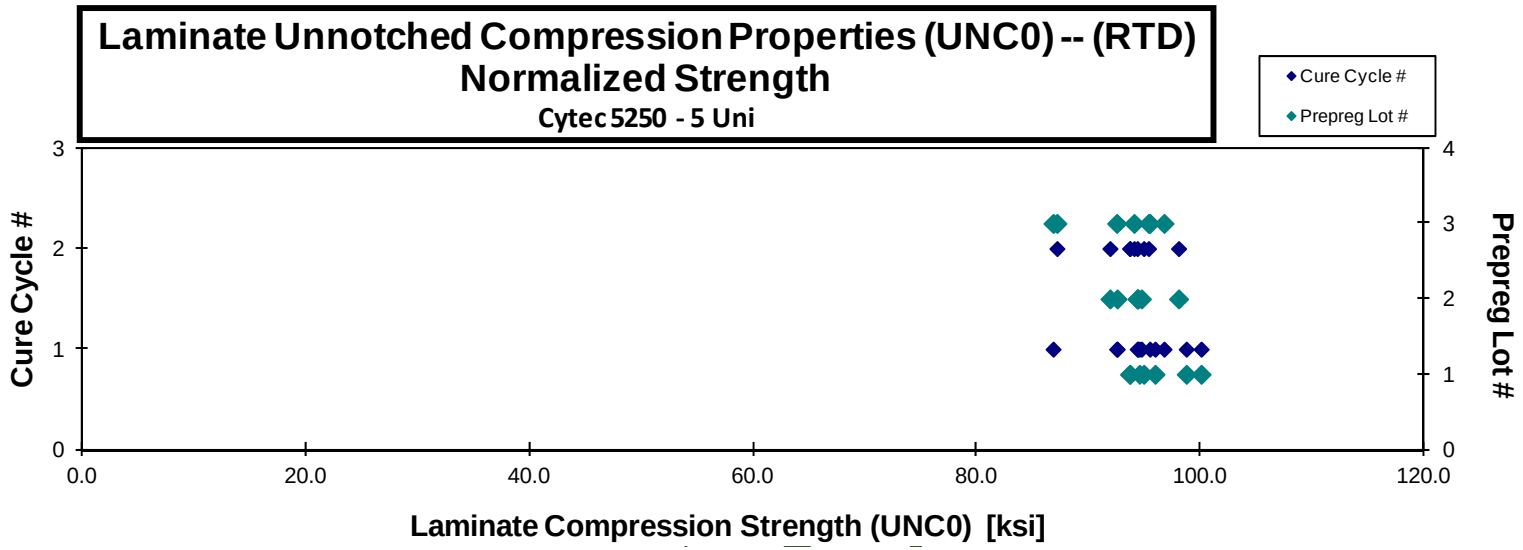

Laminate Unnotched Compression Properties (UNC0) -- (CTD)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Compression Modulus (UNC0) [Msi]

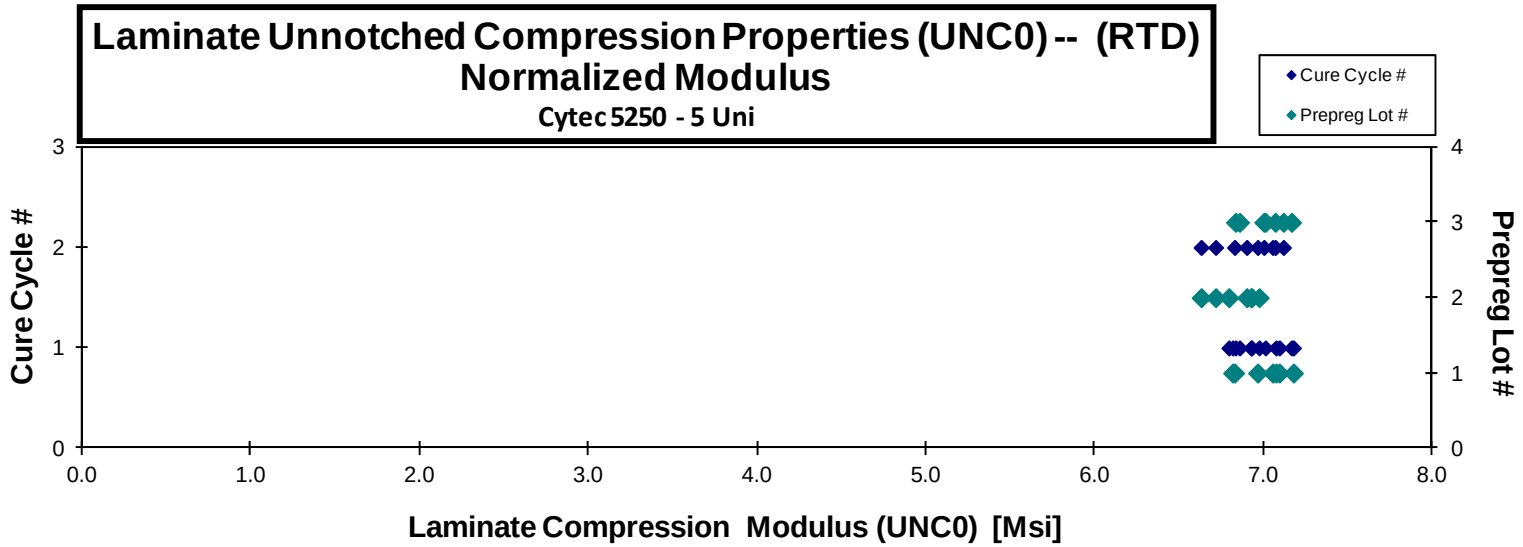
Laminate Unnotched Compression Properties (UNC0) -- (RTD)
Strength & Modulus
Cytec 5250 - 5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNARA111A	A	C1	1	1	99.583	7.237	0.115	21	BGM	0.0055	98.735	7.176
CNARA112A	A	C1	1	1	100.730	7.140	0.115	21	BGM / HAT	0.0055	100.062	7.093
CNARA113A	A	C1	1	1	94.946	6.845	0.115	21	BGM	0.0055	94.549	6.816
CNARA114A	A	C1	1	1	96.052	7.081	0.115	21	BGM	0.0055	95.941	7.072
CNARA211A	A	C2	1	2	96.839	7.104	0.113	21	BGM	0.0054	94.925	6.964
CNARA212A	A	C2	1	2	96.074	7.232	0.113	21	BGM	0.0054	93.689	7.053
CNARA213A	A	C2	1	2	96.288	7.018	0.112	21	BGM	0.0054	93.675	6.827
CNARB111A	B	C1	2	1	95.537	6.984	0.115	21	BGM	0.0055	94.724	6.925
CNARB112A	B	C1	2	1	95.389	6.864	0.114	21	BGM	0.0054	94.412	6.793
CNARB113A	B	C1	2	1	95.406	7.006	0.114	21	BGM	0.0054	94.346	6.928
CNARB114A	B	C1	2	1	93.630	7.054	0.114	21	BGM	0.0054	92.549	6.973
CNARB211A	B	C2	2	2	98.845	6.770	0.115	21	BGM	0.0055	98.046	6.715
CNARB212A	B	C2	2	2	93.583	6.750	0.113	21	BGM	0.0054	91.908	6.629
CNARB213A	B	C2	2	2	96.781	7.077	0.113	21	BGM	0.0054	94.351	6.899
CNARC111A	C	C1	3	1	99.441	7.048	0.112	21	BGM	0.0054	96.744	6.857
CNARC112A	C	C1	3	1	88.209	7.279	0.114	21	BGM	0.0054	86.822	7.164
CNARC113A	C	C1	3	1	94.006	6.943	0.114	21	BGM	0.0054	92.514	6.833
CNARC114A	C	C1	3	1	96.416	7.079	0.114	21	BGM	0.0054	95.470	7.010
CNARC211A	C	C2	3	2	96.241	7.232	0.113	21	BGM	0.0054	94.061	7.068
CNARC212A	C	C2	3	2	88.367	7.097	0.114	21	BGM	0.0054	87.168	7.001
CNARC213A	C	C2	3	2	96.315	7.188	0.114	21	BGM	0.0054	95.356	7.116

Average	**95.651**	**7.049**	**$Average_{norm}$**	**0.0054**	**94.288**	**6.948**
Standard Dev.	**3.088**	**0.151**	**$Standard\ Dev._{norm}$**		**3.149**	**0.147**
Coeff. of Var. [%]	**3.229**	**2.135**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**3.339**	**2.118**
Min.	**88.209**	**6.750**	**Min.**	**0.0054**	**86.822**	**6.629**
Max.	**100.730**	**7.279**	**Max.**	**0.0055**	**100.062**	**7.176**
Number of Spec.	**21**	**21**	**Number of Spec.**		**21**	**21**


Laminate Unnotched Compression Properties (UNC0) -- (RTD)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Compression Strength (UNC0) [ksi]

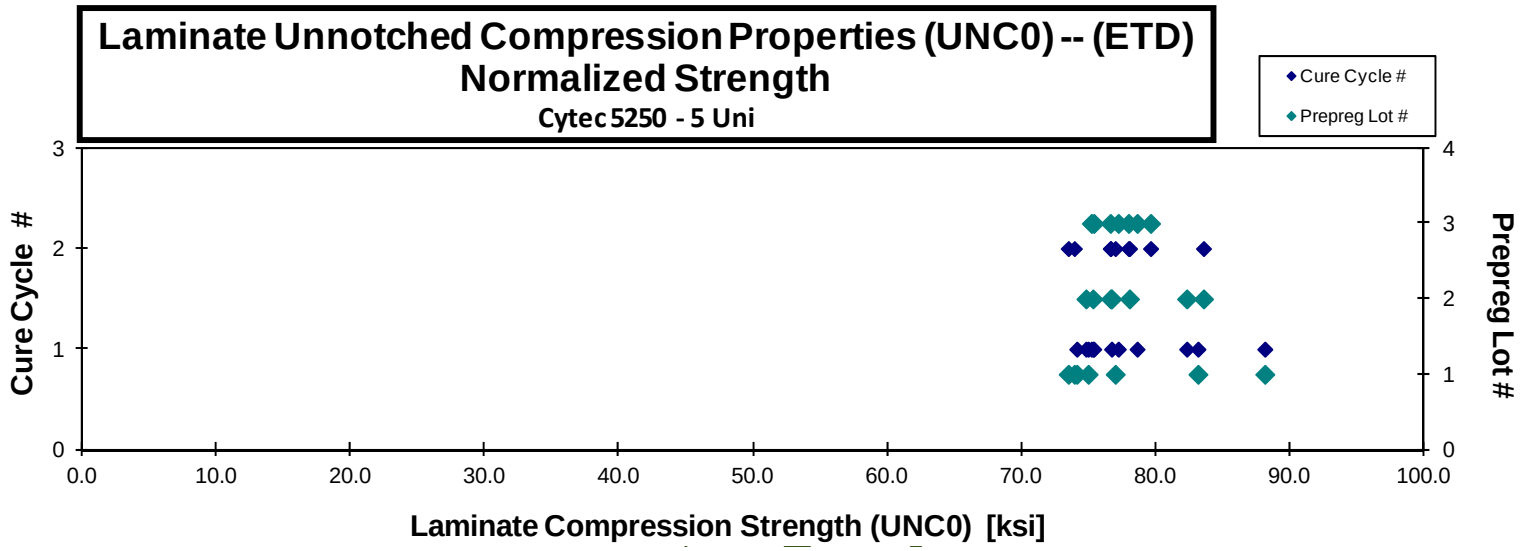

Laminate Unnotched Compression Properties (UNC0) -- (RTD)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Compression Modulus (UNC0) [Msi]

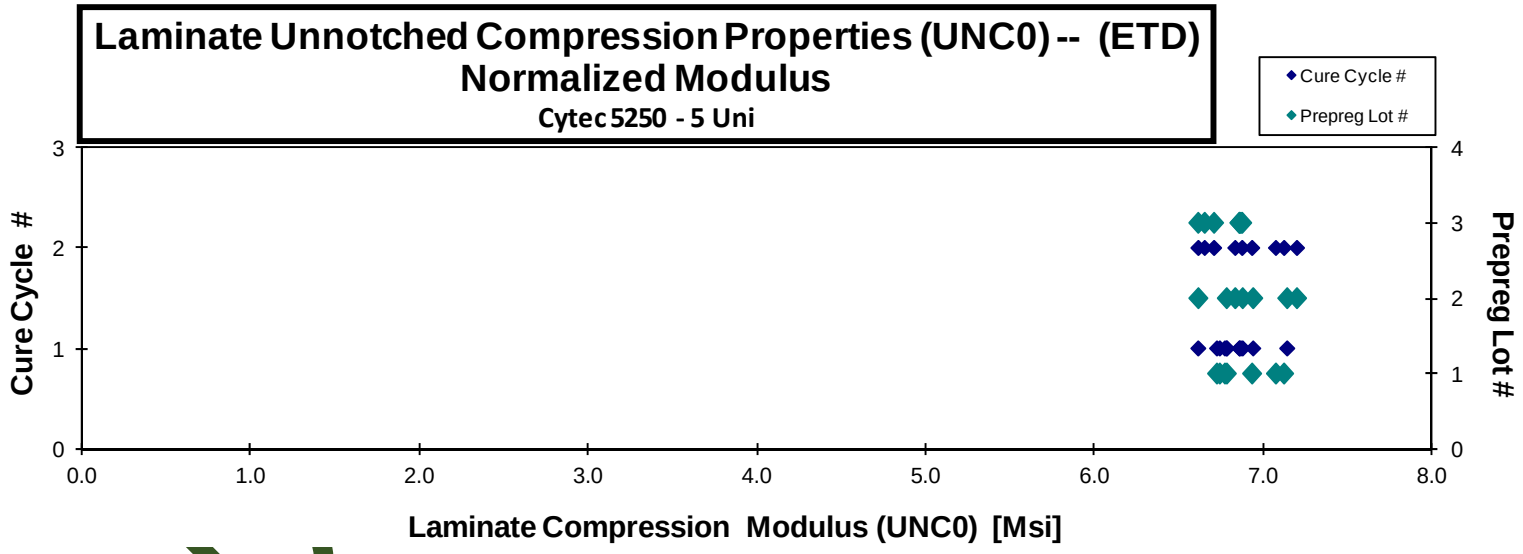
Laminate Unnotched Compression Properties (UNC0) -- (ETD)
Strength & Modulus
Cytec 5250 - 5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNARA11BK	A	C1	1	1	88.108	6.777	0.116	21	BGM	0.0055	88.134	6.779
CNARA11CK	A	C1	1	1	83.187	6.771	0.115	21	BGM	0.0055	83.151	6.768
CNARA11DK	A	C1	1	1	74.163	6.724	0.115	21	HAT	0.0055	74.120	6.720
CNARA11EK	A	C1	1	1	76.097	6.839	0.114	21	HAB	0.0054	74.966	6.737
CNARA219K	A	C2	1	2	73.442	7.065	0.116	21	BGM	0.0055	73.484	7.069
CNARA21AK	A	C2	1	2	76.765	6.909	0.116	21	BGM	0.0055	76.987	6.928
CNARA21BK	A	C2	1	2	75.495	7.268	0.113	21	BGM	0.0054	73.937	7.118
CNARB119K	B	C1	2	1	74.933	6.947	0.115	21	BGM	0.0055	74.803	6.935
CNARB11AK	B	C1	2	1	75.330	7.137	0.115	21	BGM	0.0055	75.320	7.136
CNARB11BK	B	C1	2	1	82.992	6.834	0.115	21	BGM	0.0055	82.309	6.778
CNARB11CK	B	C1	2	1	77.395	6.933	0.114	21	BGM	0.0055	76.713	6.872
CNARB219K	B	C2	2	2	83.914	6.857	0.115	21	BGM	0.0055	83.563	6.829
CNARB21AK	B	C2	2	2	77.909	6.598	0.116	21	BGM	0.0055	78.044	6.610
CNARB21BK	B	C2	2	2	76.079	7.142	0.116	21	BGM	0.0055	76.639	7.194
CNARC119K	C	C1	3	1	78.008	6.924	0.114	21	BGM	0.0054	77.209	6.853
CNARC11AK	C	C1	3	1	76.241	6.932	0.114	21	BGM	0.0054	75.383	6.854
CNARC11BK	C	C1	3	1	77.221	6.787	0.112	21	BGM	0.0054	75.204	6.609
CNARC11CK	C	C1	3	1	79.800	6.965	0.114	21	BGM	0.0054	78.613	6.862
CNARC219K	C	C2	3	2	80.257	6.757	0.115	21	BAT	0.0055	79.620	6.703
CNARC21AK	C	C2	3	2	77.109	6.690	0.115	21	BGM	0.0055	76.620	6.648
CNARC21BK	C	C2	3	2	78.822	6.945	0.114	21	BAB	0.0054	77.969	6.870

Average	78.251	6.895	$Average_{norm}$	0.0055	77.752	6.851
Standard Dev.	3.665	0.163	$Standard\ Dev._{norm}$		3.747	0.167
Coeff. of Var. [%]	4.684	2.360	$Coeff.\ of\ Var.\ [\%]_{norm}$		4.819	2.442
Min.	73.442	6.598	Min.	0.0054	73.484	6.609
Max.	88.108	7.268	Max.	0.0055	88.134	7.194
Number of Spec.	21	21	Number of Spec.		21	21


Laminate Unnotched Compression Properties (UNC0) -- (ETD)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Compression Strength (UNC0) [ksi]


Laminate Unnotched Compression Properties (UNC0) -- (ETD)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Compression Modulus (UNC0) [Msi]

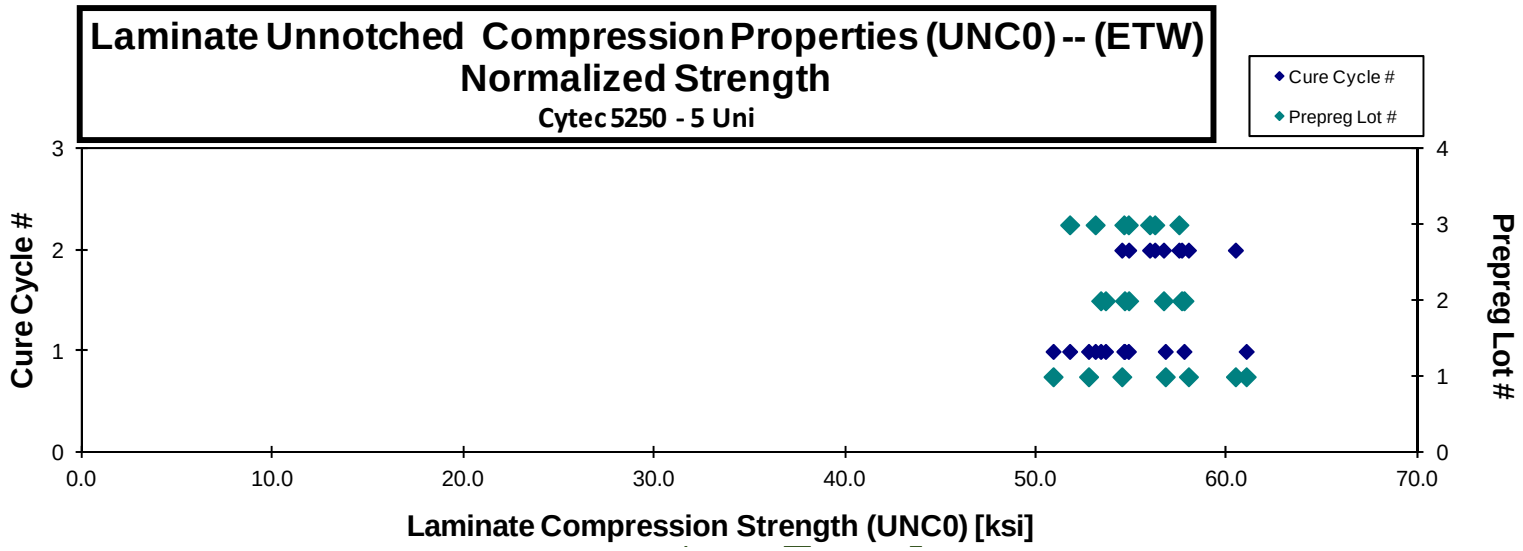
Laminate Unnotched Compression Properties (UNC0) -- (ETW)
Strength & Modulus
Cytec 5250 - 5 Uni

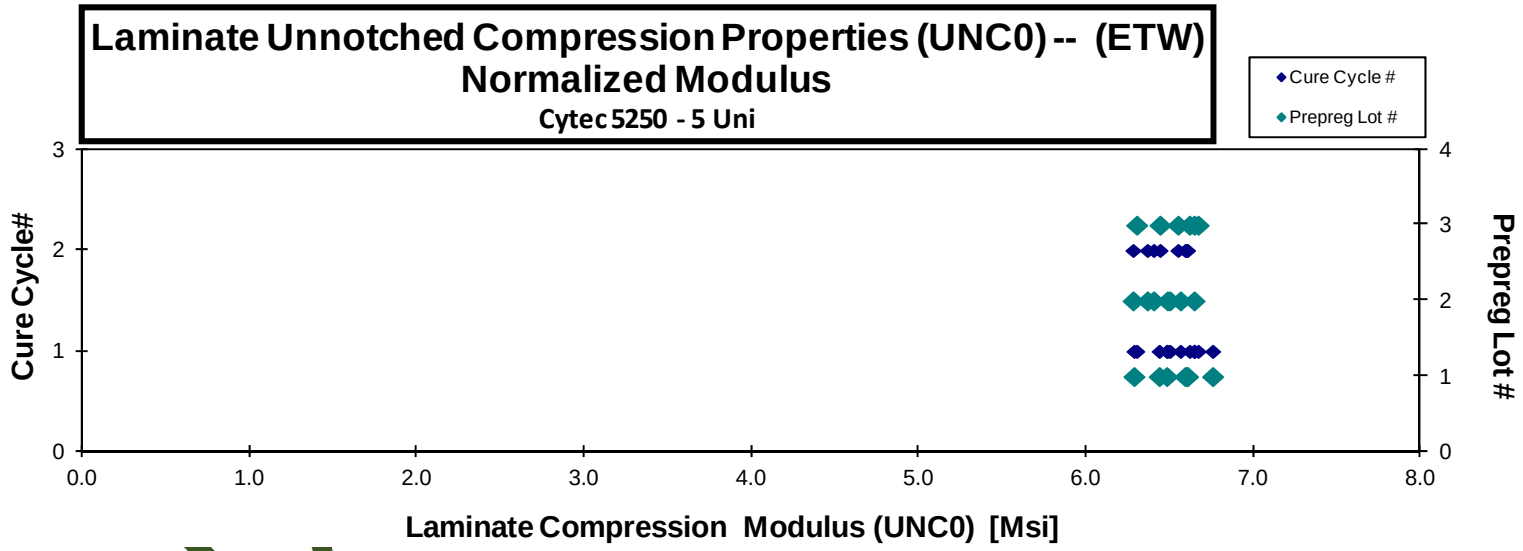
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNARA11GJ	A	C1	1	1		6.770	0.115	21	BGM	0.0055		6.759
CNARA11HJ	A	C1	1	1		6.435	0.116	21	BGM	0.0053		6.440
CNARA11IJ	A	C1	1	1		6.272	0.116	21	BGM	0.0055		6.289
CNARA11JJ	A	C1	1	1		6.456	0.116	21	BGM	0.0055		6.484
CNARA11KJ	A	C1	1	1	60.804		0.116	21	BGM	0.0055	61.014	
CNARA11LJ	A	C1	1	1	56.569		0.116	21	BGM	0.0055	56.773	
CNARA11MJ	A	C1	1	1	52.610		0.116	21	BGM	0.0055	52.754	
CNARA11NJ	A	C1	1	1	50.582		0.116	21	BGM	0.0055	50.895	
CNARA21DJ	A	C2	1	2		6.873	0.111	21	BGM	0.0053		6.609
CNARA21EJ	A	C2	1	2		6.858	0.111	21	BGM	0.0053		6.594
CNARA21FJ	A	C2	1	2		6.858	0.111	21	BGM	0.0053		6.605
CNARA21GJ	A	C2	1	2	62.070		0.112	21	BGM	0.0054	60.449	
CNARA21HJ	A	C2	1	2	59.314		0.113	21	BGM	0.0054	57.988	
CNARA21IJ	A	C2	1	2	55.490		0.113	21	BGM	0.0054	54.497	
CNARB11DJ	B	C1	2	1		6.617	0.115	21	BGM	0.0055		6.567
CNARB11EJ	B	C1	2	1		6.685	0.115	21	BGM	0.0055		6.649
CNARB11FJ	B	C1	2	1		6.525	0.115	21	BGM	0.0055		6.503
CNARB11GJ	B	C1	2	1		6.501	0.115	21	BGM	0.0055		6.489
CNARB11HJ	B	C1	2	1	53.328		0.116	21	BGM	0.0055	53.389	
CNARB11IJ	B	C1	2	1	57.307		0.116	21	HGM / BGM	0.0055	57.754	
CNARB11JJ	B	C1	2	1	54.160		0.117	21	HGM / BGM	0.0055	54.637	
CNARB11KJ	B	C1	2	1	53.043		0.117	21	BGM	0.0056	53.640	
CNARB21DJ	B	C2	2	2		6.369	0.116	21	BGM	0.0055		6.369
CNARB21EJ	B	C2	2	2		6.340	0.114	21	HGM	0.0055		6.284
CNARB21FJ	B	C2	2	2		6.512	0.114	21	HGM / BGM	0.0054		6.406
CNARB21GJ	B	C2	2	2	58.894		0.113	21	BGM	0.0054	57.628	
CNARB21HJ	B	C2	2	2	56.163		0.113	21	BGM	0.0054	54.859	
CNARB21IJ	B	C2	2	2	57.806		0.113	21	BGM	0.0054	56.680	
CNARC11DJ	C	C1	3	1		6.347	0.115	21	BGM	0.0055		6.305
CNARC11EJ	C	C1	3	1		6.692	0.115	21	BGM	0.0055		6.673
CNARC11FJ	C	C1	3	1		6.652	0.115	21	BGM	0.0055		6.621
CNARC11GJ	C	C1	3	1		6.685	0.115	21	BGM	0.0055		6.649
CNARC11HJ	C	C1	3	1	54.912		0.115	21	BGM	0.0055	54.603	
CNARC11IJ	C	C1	3	1	51.975		0.115	21	BGM	0.0055	51.765	
CNARC11JJ	C	C1	3	1	55.092		0.115	21	BGM	0.0055	54.838	
CNARC11KJ	C	C1	3	1	53.362		0.115	21	BGM	0.0055	53.100	
CNARC21DJ	C	C2	3	2		6.529	0.116	21	BGM	0.0055		6.552
CNARC21FJ	C	C2	3	2		6.424	0.116	21	BGM	0.0055		6.445
CNARC21GJ	C	C2	3	2	55.916		0.116	21	BGM	0.0055	56.222	
CNARC21HJ	C	C2	3	2	57.273		0.116	21	BGM	0.0055	57.488	
CNARC21IJ	C	C2	3	2	55.745		0.116	21	BGM	0.0055	55.954	

	Strength [ksi]	Modulus [Msi]
Average	55.829	6.570
Standard Dev.	2.926	0.184
Coeff. of Var. [%]	5.241	2.802
Min.	50.582	6.272
Max.	62.070	6.873
Number of Spec.	21	20

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0055	55.568	6.515
$Standard\ Dev._{norm}$		2.627	0.136
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.728	2.091
Min.	0.0053	50.895	6.284
Max.	0.0056	61.014	6.759
Number of Spec.		21	20


Laminate Unnotched Compression Properties (UNC0) -- (ETW)
Normalized Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
Laminate Compression Strength (UNC0) [ksi]


Laminate Unnotched Compression Properties (UNC0) -- (ETW)
Normalized Modulus
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle#
Prepreg Lot #
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Compression Modulus (UNC0) [Msi]

4.11 "25/50/25" Unnotched Compression 1 Properties (UNC1)

Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

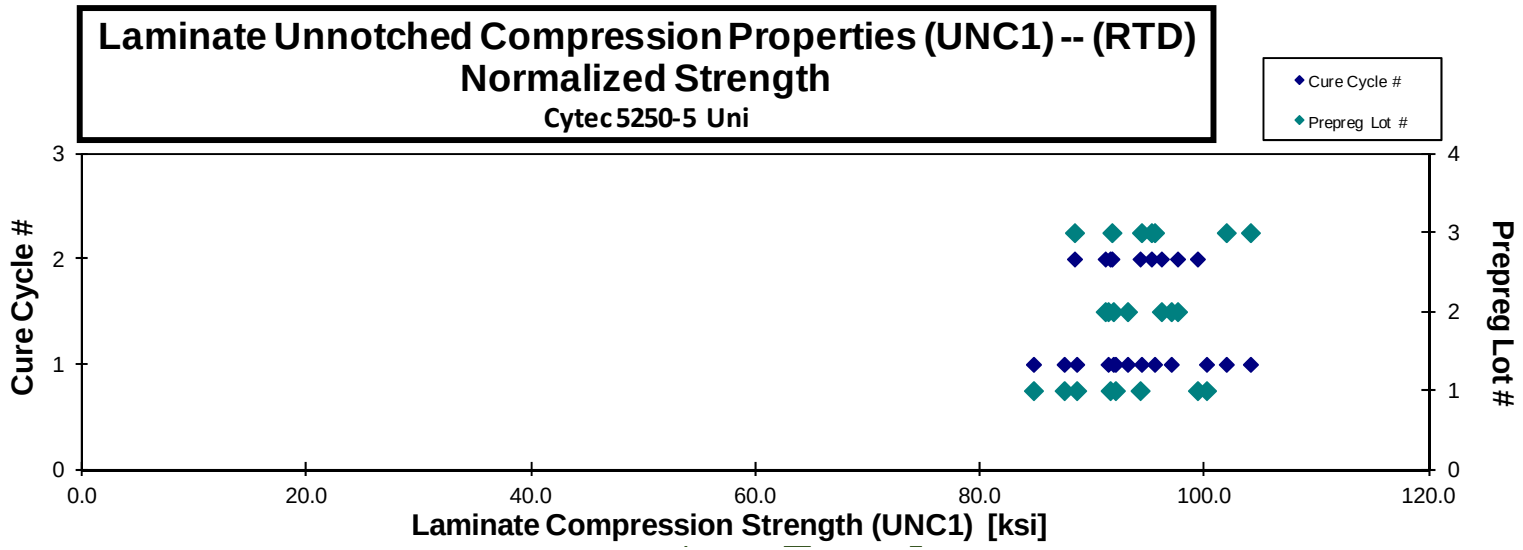
normalizing t_{ply} [in]: 0.0055

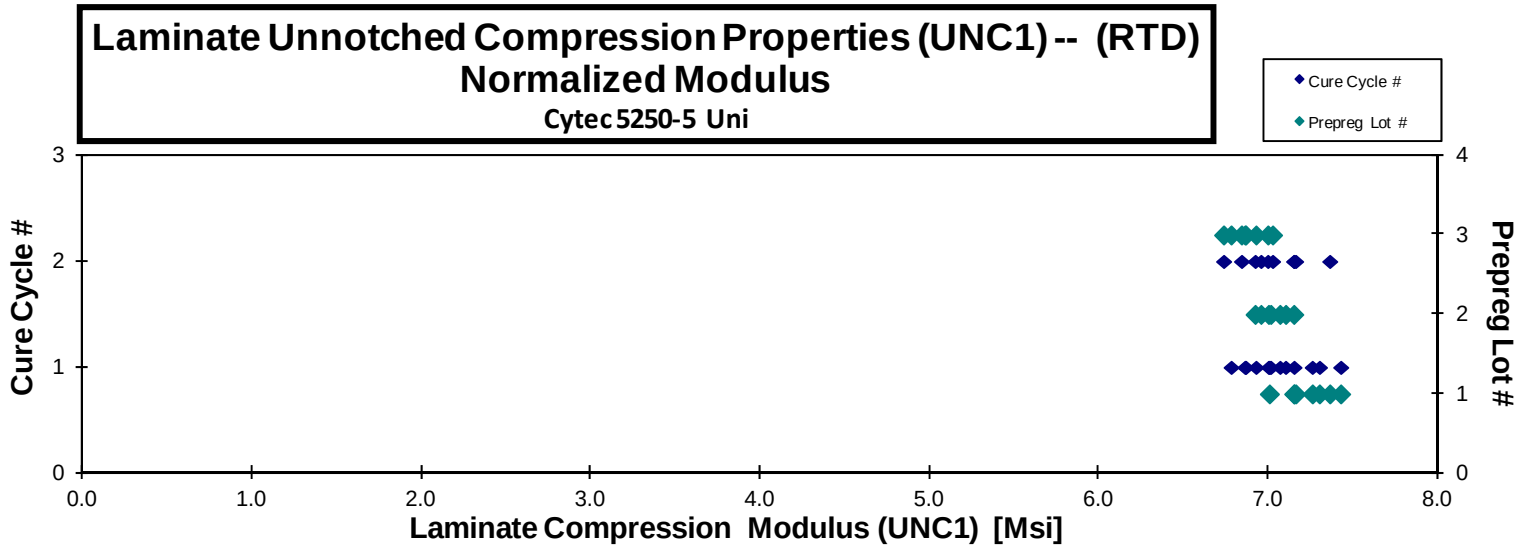
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAWA111A	A	C1	1	1	86.286	7.563	0.130	24	BGM	0.0054	84.739	7.428
CNAWA112A	A	C1	1	1	101.718	7.416	0.130	24	BGM	0.0054	100.158	7.302
CNAWA113A	A	C1	1	1	93.091	7.343	0.131	24	BGM	0.0054	92.039	7.260
CNAWA114A	A	C1	1	1	89.378	7.216	0.131	24	BGM	0.0055	88.588	7.152
CNAWA115A	A	C1	1	1	87.926	7.043	0.131	24	BGM	0.0055	87.477	7.007
CNAWA211A	A	C2	1	2	97.301	7.394	0.128	24	BGM	0.0053	94.242	7.162
CNAWA212A	A	C2	1	2	101.358	7.295	0.129	24	BGM	0.0054	99.349	7.151
CNAWA213A	A	C2	1	2	92.640	7.449	0.130	24	BGM	0.0054	91.570	7.363
CNAWB111A	B	C1	2	1	95.091	7.252	0.129	24	BGM	0.0054	93.122	7.102
CNAWB112A	B	C1	2	1	98.536	7.111	0.130	24	BGM	0.0054	97.018	7.001
CNAWB113A	B	C1	2	1	92.771	7.176	0.130	24	BGM	0.0054	91.389	7.069
CNAWB114A	B	C1	2	1	93.090	7.109	0.130	24	BGM	0.0054	91.856	7.014
CNAWB211A	B	C2	2	2	98.234	7.073	0.129	24	BGM	0.0054	96.138	6.922
CNAWB212A	B	C2	2	2	92.647	7.072	0.130	24	BGM	0.0054	91.132	6.957
CNAWB213A	B	C2	2	2	99.041	7.258	0.130	24	BGM	0.0054	97.578	7.151
CNAWC111A	C	C1	3	1	98.366	7.133	0.128	24	BGM	0.0053	95.528	6.927
CNAWC113A	C	C1	3	1	95.378	6.940	0.131	24	BGM	0.0054	94.367	6.867
CNAWC114A	C	C1	3	1	102.988	6.852	0.131	24	BGM	0.0054	101.921	6.781
CNAWC115A	C	C1	3	1	105.525	6.958	0.130	24	BGM	0.0054	104.073	6.862
CNAWC211A*	C	C2	3	2		6.876	0.129	24	HIB	0.0054		6.736
CNAWC212A	C	C2	3	2	96.893	6.960	0.130	24	BGM	0.0054	95.247	6.842
CNAWC213A	C	C2	3	2	92.980	7.121	0.130	24	BGM	0.0054	91.729	7.026
CNAWC214A	C	C2	3	2	89.302	7.069	0.131	24	BGM	0.0054	88.394	6.998

***Strength not reported due to bad failure mode**

Average	95.479	7.16
Standard Dev.	5.034	0.19
Coeff. of Var. [%]	5.273	2.65
Min.	86.286	6.85
Max.	105.525	7.56
Number of Spec.	22	23

$Average_{norm}$	0.0054	93.984	7.05
$Standard\ Dev._{norm}$		4.809	0.18
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.117	2.58
Min.	0.0053	84.739	6.74
Max.	0.0055	104.073	7.43
Number of Spec.		22	23


Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Compression Strength (UNC1) [ksi]

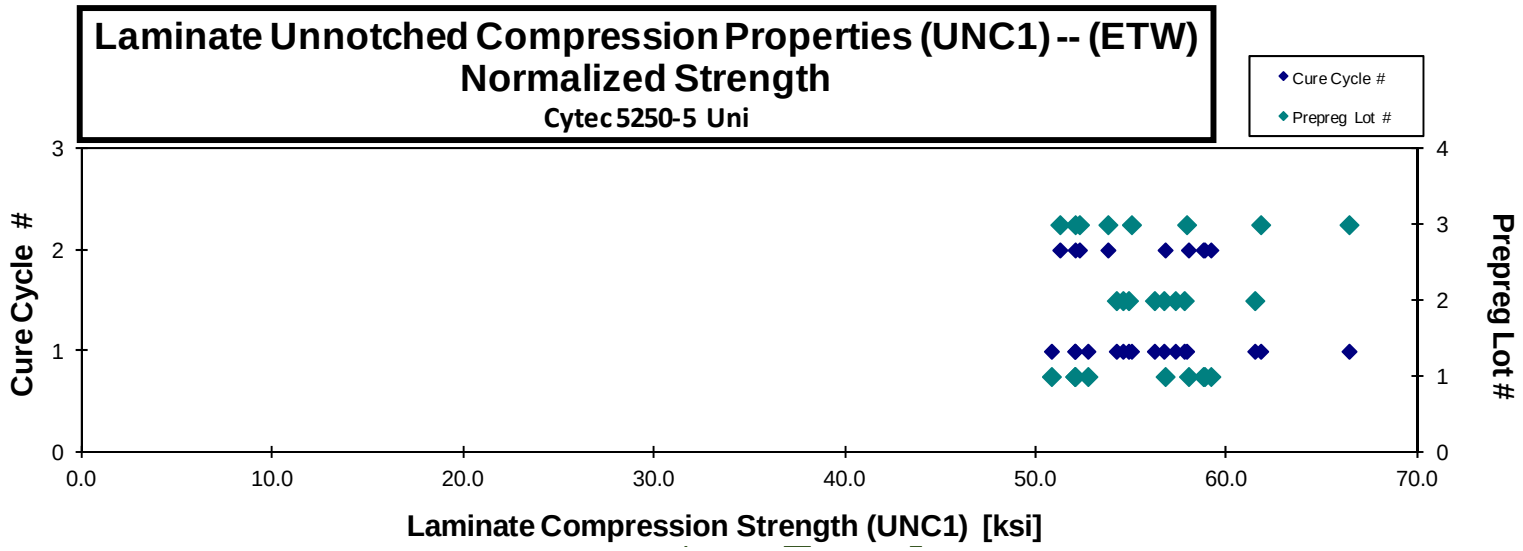

Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Compression Modulus (UNC1) [Msi]

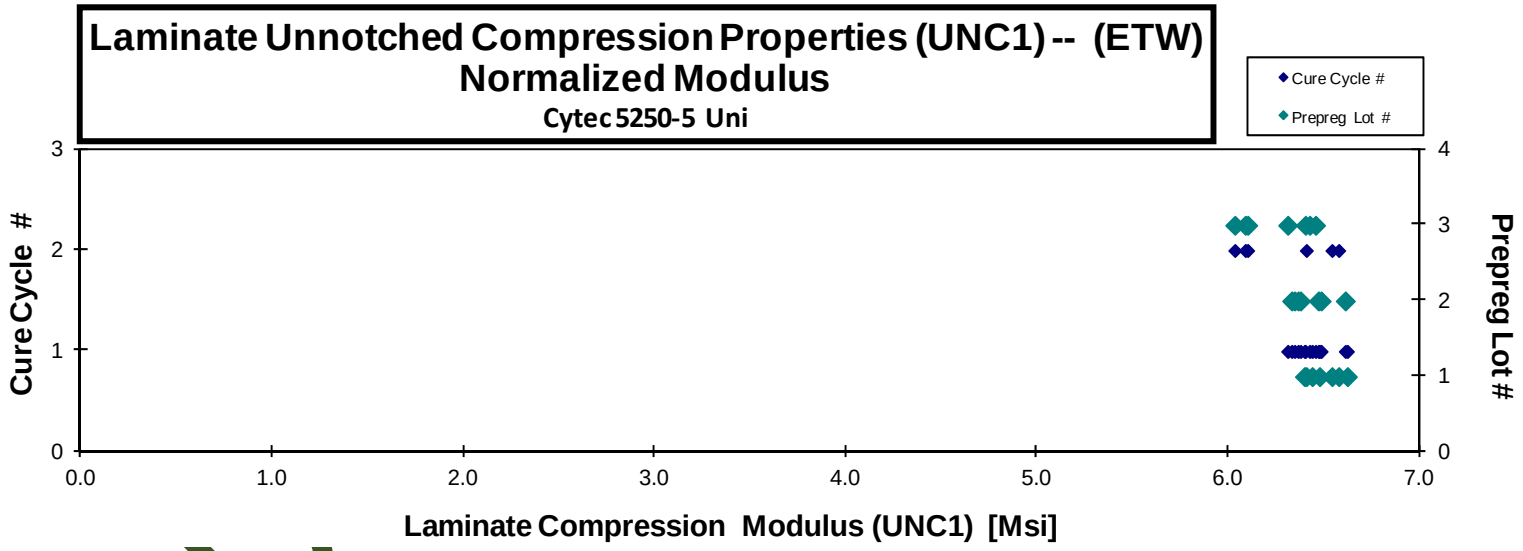
Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAWA117J	A	C1	1	1		6.471	0.132	24	BGM	0.0055		6.473
CNAWA118J	A	C1	1	1		6.418	0.132	24	BGM	0.0055		6.435
CNAWA119J	A	C1	1	1		6.458	0.131	24	BGM/HIT	0.0054		6.395
CNAWA11AJ	A	C1	1	1		6.690	0.131	24	BGM	0.0054		6.619
CNAWA11BJ	A	C1	1	1	52.688		0.130	24	BGM	0.0054	52.036	
CNAWA11CJ	A	C1	1	1	51.409		0.130	24	BGM	0.0054	50.809	
CNAWA11DJ	A	C1	1	1	52.354		0.131	24	BGM	0.0055	52.033	
CNAWA11EJ	A	C1	1	1	52.918		0.132	24	BGM	0.0055	52.717	
CNAWA217J	A	C2	1	2		6.469	0.131	24	BAB/HGM	0.0054		6.404
CNAWA218J	A	C2	1	2		6.651	0.130	24	BGM	0.0054		6.574
CNAWA219J	A	C2	1	2		6.737	0.128	24	BGM	0.0053		6.538
CNAWA21AJ	A	C2	1	2	60.223		0.129	24	BGM	0.0054	58.828	
CNAWA21BJ	A	C2	1	2	58.611		0.131	24	BGM	0.0054	57.989	
CNAWA21CJ	A	C2	1	2	59.208		0.131	24	BGM/HIB	0.0055	58.759	
CNAWA21DJ	A	C2	1	2	59.670		0.131	24	BGM/HIB	0.0055	59.162	
CNAWA21EJ	A	C2	1	2	57.316		0.131	24	BGM	0.0054	56.766	
CNAWB117J	B	C1	2	1		6.510	0.131	24	BGM	0.0055		6.468
CNAWB118J	B	C1	2	1		6.637	0.131	24	BGM	0.0055		6.608
CNAWB119J	B	C1	2	1		6.475	0.130	24	BGM	0.0054		6.361
CNAWB11AJ	B	C1	2	1		6.426	0.130	24	BGM	0.0054		6.343
CNAWB11BJ	B	C1	2	1	62.085		0.131	24	BAT / HAT	0.0054	61.466	
CNAWB11CJ	B	C1	2	1	57.730		0.131	24	BGM	0.0055	57.300	
CNAWB11DJ	B	C1	2	1	58.142		0.131	24	BAT / HIT	0.0055	57.768	
CNAWB11EJ	B	C1	2	1	56.994		0.131	24	BAT	0.0055	56.699	
CNAWB11FJ	B	C1	2	1	56.966		0.130	24	BGM	0.0054	56.203	
CNAWB217J	B	C2	2	1		6.450	0.130	24	BGM	0.0054		6.374
CNAWB218J	B	C2	2	1		6.564	0.130	24	BGM	0.0054		6.482
CNAWB219J	B	C2	2	1		6.481	0.129	24	BGM	0.0054		6.328
CNAWB21AJ	B	C2	2	1	56.505		0.130	24	BGM	0.0054	54.551	
CNAWB21BJ	B	C2	2	1	55.604		0.130	24	BGM	0.0054	54.849	
CNAWB21CJ	B	C2	2	1	54.825		0.131	24	BGM	0.0054	54.209	
CNAWC117J	C	C1	3	1		6.482	0.131	24	BGM	0.0054		6.422
CNAWC118J	C	C1	3	1		6.386	0.130	24	BGM	0.0054		6.307
CNAWC119J	C	C1	3	1		6.573	0.130	24	BGM	0.0054		6.452
CNAWC11AJ	C	C1	3	1		6.470	0.131	24	BGM	0.0054		6.399
CNAWC11CJ	C	C1	3	1	66.534		0.132	24	BGM / HAB	0.0055	66.403	
CNAWC11DJ	C	C1	3	1	62.207		0.131	24	BGM	0.0055	61.775	
CNAWC11EJ	C	C1	3	1	57.923		0.132	24	BGM	0.0055	57.894	
CNAWC11FJ	C	C1	3	1	54.847		0.132	24	BGM	0.0055	55.002	
CNAWC217J	C	C2	3	2		6.122	0.131	24	BGM	0.0055		6.098
CNAWC218J	C	C2	3	2		6.054	0.131	24	BGM / HIB	0.0055		6.030
CNAWC219J	C	C2	3	2		6.196	0.130	24	BGM	0.0054		6.085
CNAWC21AJ	C	C2	3	2	51.998		0.130	24	BGM	0.0054	51.250	
CNAWC21BJ	C	C2	3	2	52.643		0.131	24	BGM	0.0054	52.051	
CNAWC21CJ	C	C2	3	2	54.258		0.131	24	BGM / HIT	0.0055	53.768	
CNAWC21DJ	C	C2	3	2	52.535		0.131	24	BGM	0.0055	52.276	

Average	56.608	6.46	$Average_{norm}$	0.0054	56.103	6.39
Standard Dev.	3.769	0.17	$Standard\ Dev._{norm}$		3.786	0.16
Coeff. of Var. [%]	6.658	2.64	$Coeff.\ of\ Var.\ [\%]_{norm}$		6.749	2.49
Min.	51.409	6.05	Min.	0.0053	50.809	6.03
Max.	66.534	6.74	Max.	0.0055	66.403	6.62
Number of Spec.	25	21.00	Number of Spec.		25	21.00


Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
Laminate Compression Strength (UNC1) [ksi]


Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
Laminate Compression Modulus (UNC1) [Msi]

4.12 "10/80/10" Unnotched Compression 2 Properties (UNC2)

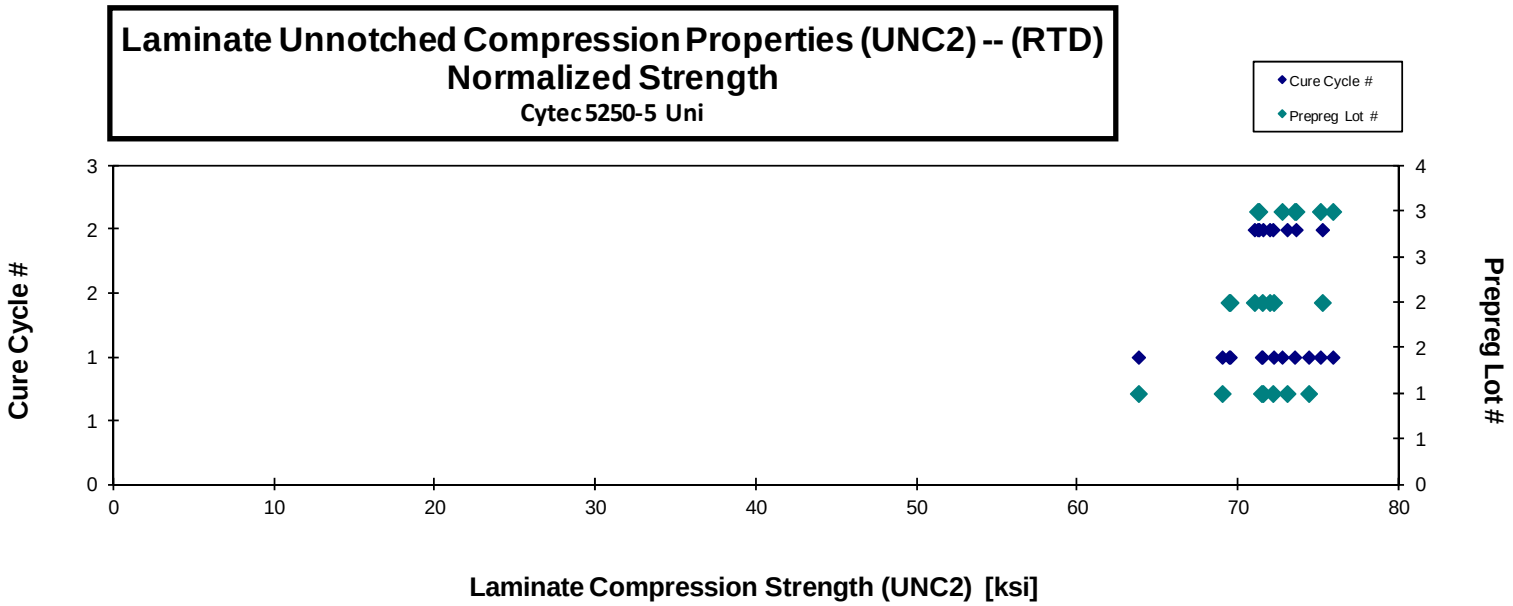
Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

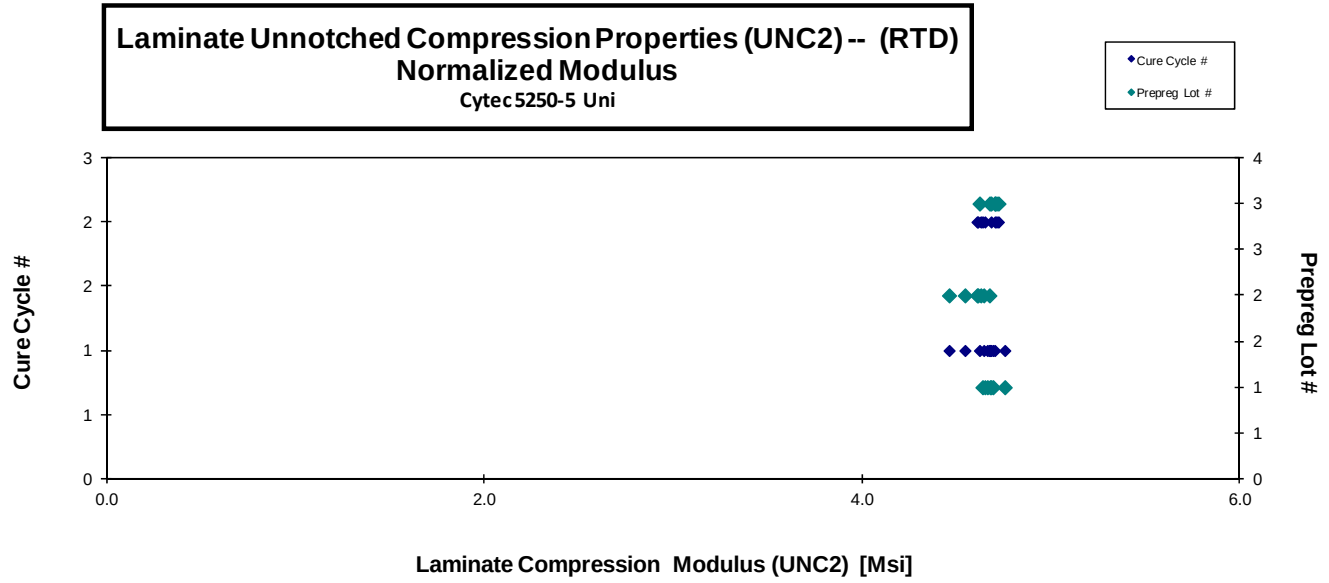
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAXA111A	A	C1	1	1	72.173	4.892	0.105	20	BGM	0.0053	69.007	4.678
CNAXA112A	A	C1	1	1	76.842	4.913	0.106	20	BGM	0.0053	74.391	4.756
CNAXA113A	A	C1	1	1	73.069	4.800	0.108	20	BGM	0.0054	71.453	4.693
CNAXA114A	A	C1	1	1	64.624	4.725	0.109	20	BGM	0.0054	63.792	4.664
CNAXA211A	A	C2	1	2	75.109	4.769	0.107	20	BGM	0.0053	73.044	4.638
CNAXA212A	A	C2	1	2	74.095	4.775	0.107	20	BGM	0.0054	72.158	4.651
CNAXA213A	A	C2	1	2	73.626	4.820	0.107	20	BGM	0.0053	71.545	4.684
CNAXB111A	B	C1	2	1	71.950	4.623	0.106	20	BGM	0.0053	69.432	4.461
CNAXB112A	B	C1	2	1	73.165	4.651	0.108	20	BGM	0.0054	71.502	4.545
CNAXB113A	B	C1	2	1	73.253	4.742	0.108	20	BGM	0.0054	72.210	4.675
CNAXB114A	B	C1	2	1	70.115	4.686	0.109	20	BGM	0.0055	69.498	4.645
CNAXB211A	B	C2	2	2	76.656	4.980	0.102	20	BGM	0.0051	71.012	4.614
CNAXB212A	B	C2	2	2	75.881	4.860	0.104	20	BGM	0.0052	71.960	4.609
CNAXB213A	B	C2	2	2	78.069	4.803	0.106	20	BGM	0.0053	75.242	4.629
CNAXC111A	C	C1	3	1	76.533	4.895	0.106	20	BGM	0.0053	73.518	4.703
CNAXC112A	C	C1	3	1	74.819	4.755	0.107	20	BGM	0.0053	72.733	4.623
CNAXC113A	C	C1	3	1	77.435	4.779	0.108	20	BGM	0.0054	75.892	4.683
CNAXC114A	C	C1	3	1	76.252	4.746	0.108	20	BGM	0.0054	75.120	4.676
CNAXC211A	C	C2	3	2	73.763	4.886	0.106	20	BGM	0.0053	71.293	4.722
CNAXC212A	C	C2	3	2	75.428	4.829	0.107	20	BGM	0.0054	73.599	4.712
CNAXC213A	C	C2	3	2	72.439	4.785	0.108	20	BGM	0.0054	71.210	4.704

Average	74.062	4.796	
Standard Dev.	2.981	0.089	
Coeff. of Var. [%]	4.024	1.851	
Min.	64.624	4.623	
Max.	78.069	4.980	
Number of Spec.	21	21	

$Average_{norm}$	0.0053	71.886	4.655
$Standard\ Dev._{norm}$		2.640	0.064
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.673	1.382
Min.	0.0051	63.792	4.461
Max.	0.0055	75.892	4.756
Number of Spec.		21	21


Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Strength (UNC2) [ksi]

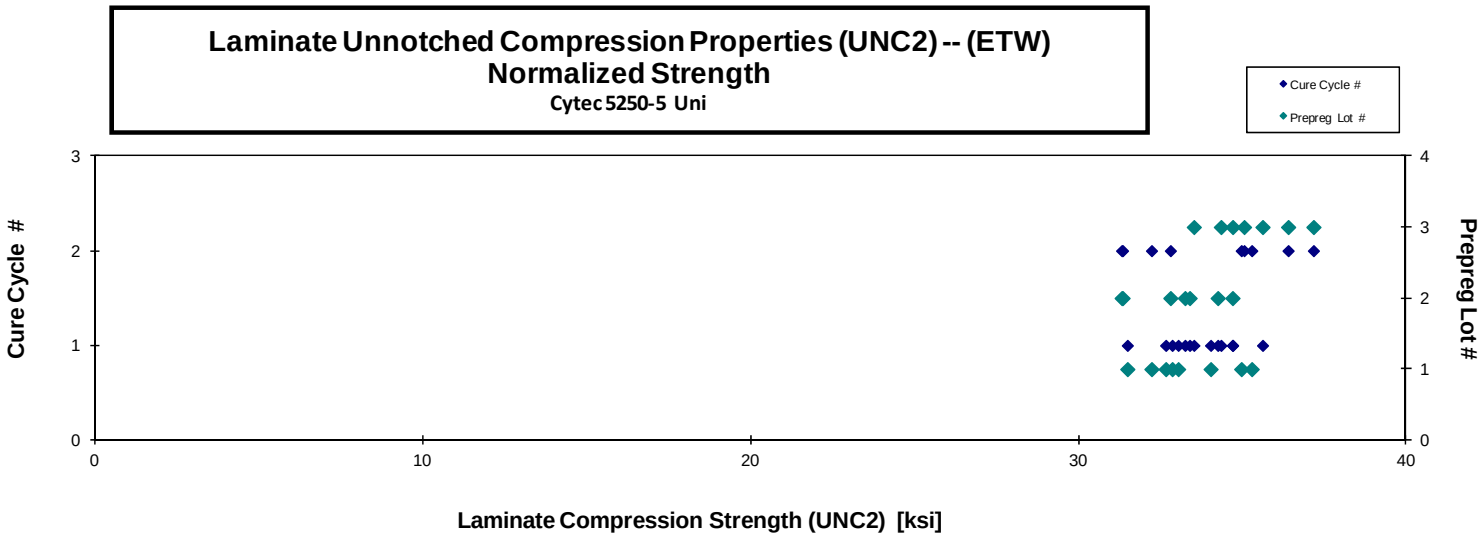

Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Modulus (UNC2) [Msi]

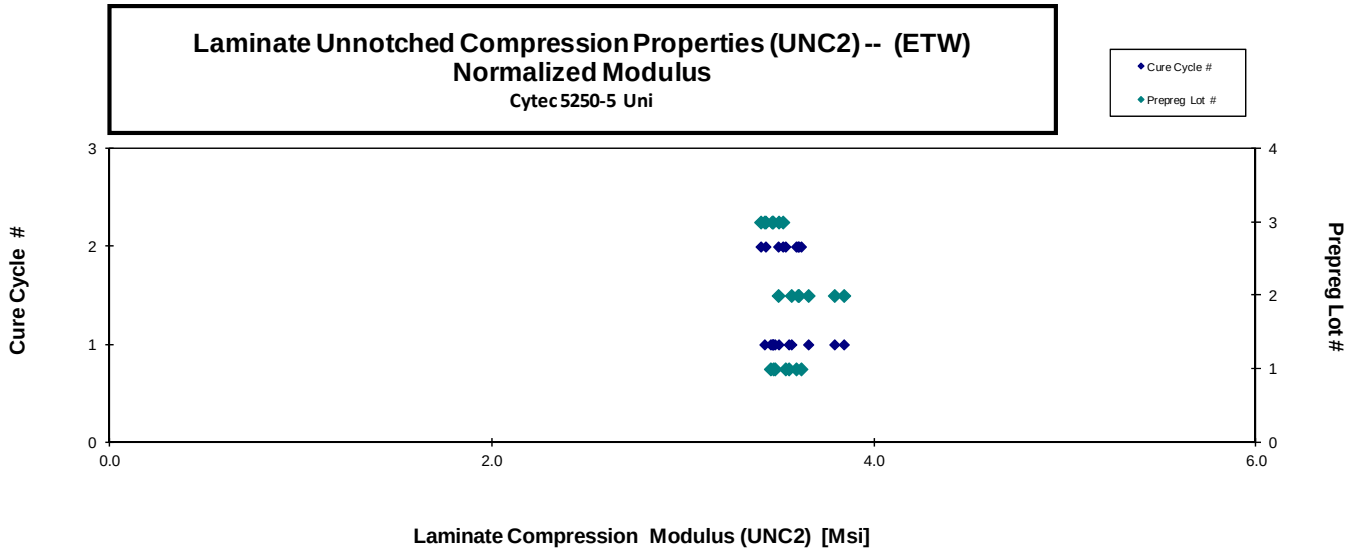
Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAXA117J	A	C1	1	1		3.552	0.110	20	BGM	0.0055		3.554
CNAXA118J	A	C1	1	1		3.475	0.110	20	BGM	0.0055		3.481
CNAXA119J	A	C1	1	1		3.543	0.107	20	BGM	0.0054		3.458
CNAXA11AJ	A	C1	1	1		3.535	0.108	20	BGM	0.0054		3.472
CNAXA11BJ	A	C1	1	1	33.240		0.109	20	BGM	0.0054	32.855	
CNAXA11CJ	A	C1	1	1	33.357		0.109	20	BGM	0.0054	33.038	
CNAXA11DJ	A	C1	1	1	34.099		0.110	20	BGM	0.0055	34.029	
CNAXA11EJ	A	C1	1	1	31.240		0.111	20	BGM	0.0055	31.488	
CNAXA11FJ	A	C1	1	1	32.265		0.111	20	BGM	0.0056	32.659	
CNAXA217J	A	C2	1	2		3.663	0.109	20	BGM	0.0054		3.618
CNAXA218J	A	C2	1	2		3.573	0.109	20	BGM	0.0054		3.536
CNAXA219J	A	C2	1	2		3.710	0.107	20	BGM	0.0053		3.593
CNAXA21AJ	A	C2	1	2	33.444		0.106	20	BGM	0.0053	32.225	
CNAXA21BJ	A	C2	1	2	36.301		0.106	20	BGM	0.0053	34.962	
CNAXA21CJ	A	C2	1	2	36.625		0.106	20	BGM	0.0053	35.282	
CNAXB117J	B	C1	2	1		3.831	0.110	20	BGM	0.0055		3.842
CNAXB118J	B	C1	2	1		3.756	0.111	20	BGM	0.0056		3.793
CNAXB119J	B	C1	2	1		3.746	0.107	20	BGM	0.0054		3.656
CNAXB11AJ	B	C1	2	1		3.621	0.108	20	BGM	0.0054		3.568
CNAXB11BJ	B	C1	2	1	34.449		0.109	20	BGM	0.0055	34.245	
CNAXB11CJ	B	C1	2	1	33.347		0.110	20	BGM	0.0055	33.387	
CNAXB11DJ	B	C1	2	1	32.987		0.111	20	BGM	0.0055	33.247	
CNAXB11EJ	B	C1	2	1	34.249		0.111	20	BGM	0.0056	34.696	
CNAXB217J	B	C2	2	2		3.648	0.109	20	BGM	0.0054		3.602
CNAXB218J	B	C2	2	2		3.652	0.109	20	BGM	0.0054		3.605
CNAXB219J	B	C2	2	2		3.761	0.102	20	BGM	0.0051		3.499
CNAXB21AJ	B	C2	2	2	33.014		0.104	20	BGM	0.0052	31.316	
CNAXB21BJ	B	C2	2	2	34.108		0.106	20	BGM	0.0053	32.803	
CNAXB21CJ	B	C2	2	2	32.261		0.107	20	BGM	0.0053	31.342	
CNAXC117J	C	C1	3	1		3.526	0.109	20	BGM	0.0055		3.501
CNAXC118J	C	C1	3	1		3.494	0.109	20	BGM	0.0055		3.471
CNAXC119J	C	C1	3	1		3.543	0.106	20	BGM	0.0053		3.427
CNAXC11AJ	C	C1	3	1		3.530	0.108	20	BGM	0.0054		3.466
CNAXC11BJ	C	C1	3	1	35.076		0.109	20	BGM	0.0054	34.699	
CNAXC11CJ	C	C1	3	1	35.842		0.109	20	BGM	0.0055	35.611	
CNAXC11DJ	C	C1	3	1	33.603		0.110	20	BGM	0.0055	33.516	
CNAXC11EJ	C	C1	3	1	34.371		0.110	20	BGM	0.0055	34.342	
CNAXC217J	C	C2	3	2		3.424	0.109	20	BGM	0.0055		3.407
CNAXC218J	C	C2	3	2		3.443	0.110	20	BGM	0.0055		3.432
CNAXC219J	C	C2	3	2		3.657	0.106	20	BGM	0.0053		3.523
CNAXC21AJ	C	C2	3	2	38.177		0.107	20	BGM	0.0054	37.165	
CNAXC21BJ	C	C2	3	2	37.186		0.108	20	BGM	0.0054	36.391	
CNAXC21CJ	C	C2	3	2	35.691		0.108	20	BGM	0.0054	35.048	

Average	34.315	3.604	$Average_{norm}$	0.0054	33.834	3.548
Standard Dev.	1.732	0.113	$Standard\ Dev._{norm}$		1.587	0.113
Coeff. of Var. [%]	5.046	3.139	$Coeff.\ of\ Var.\ [\%]_{norm}$		4.692	3.188
Min.	31.240	3.424	Min.	0.0051	31.316	3.407
Max.	38.177	3.831	Max.	0.0056	37.165	3.842
Number of Spec.	22	21	Number of Spec.		22	21


Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Strength (UNC2) [ksi]


Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Modulus (UNC2) [Msi]

4.13 "50/40/10" Unnotched Compression 3 Properties (UNC3)

Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

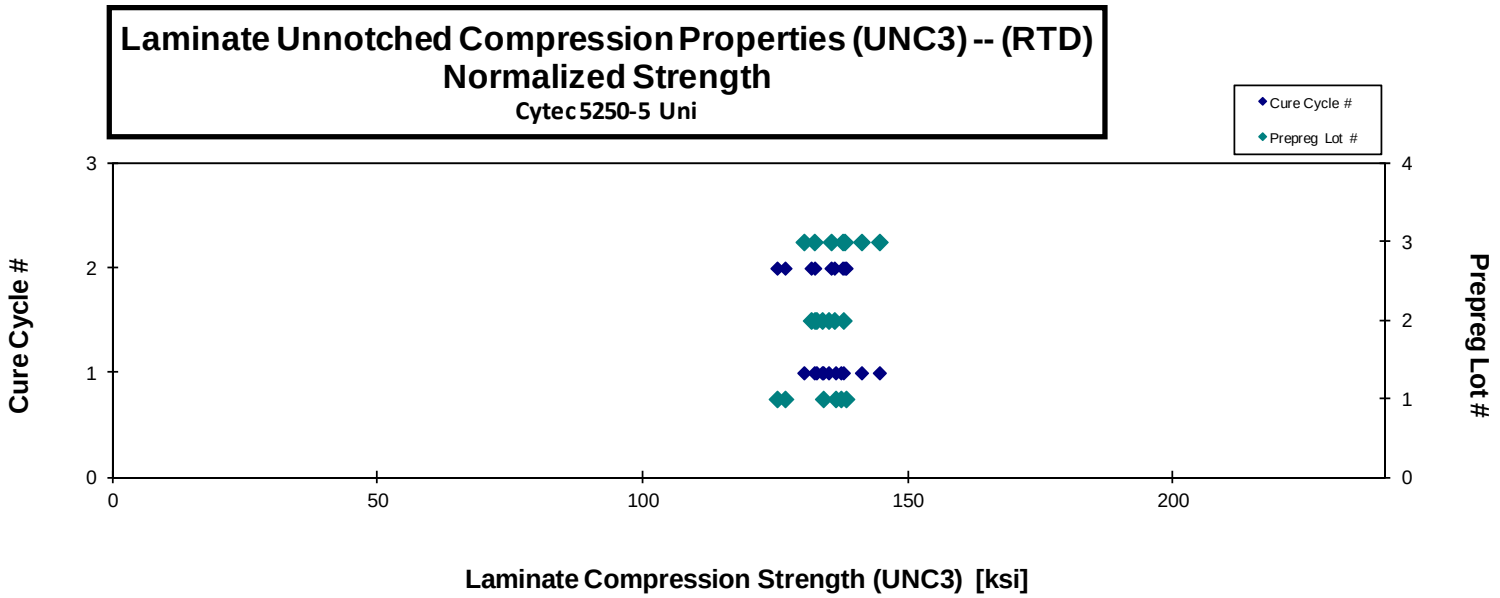
normalizing t_{ply} [in]
0.0055

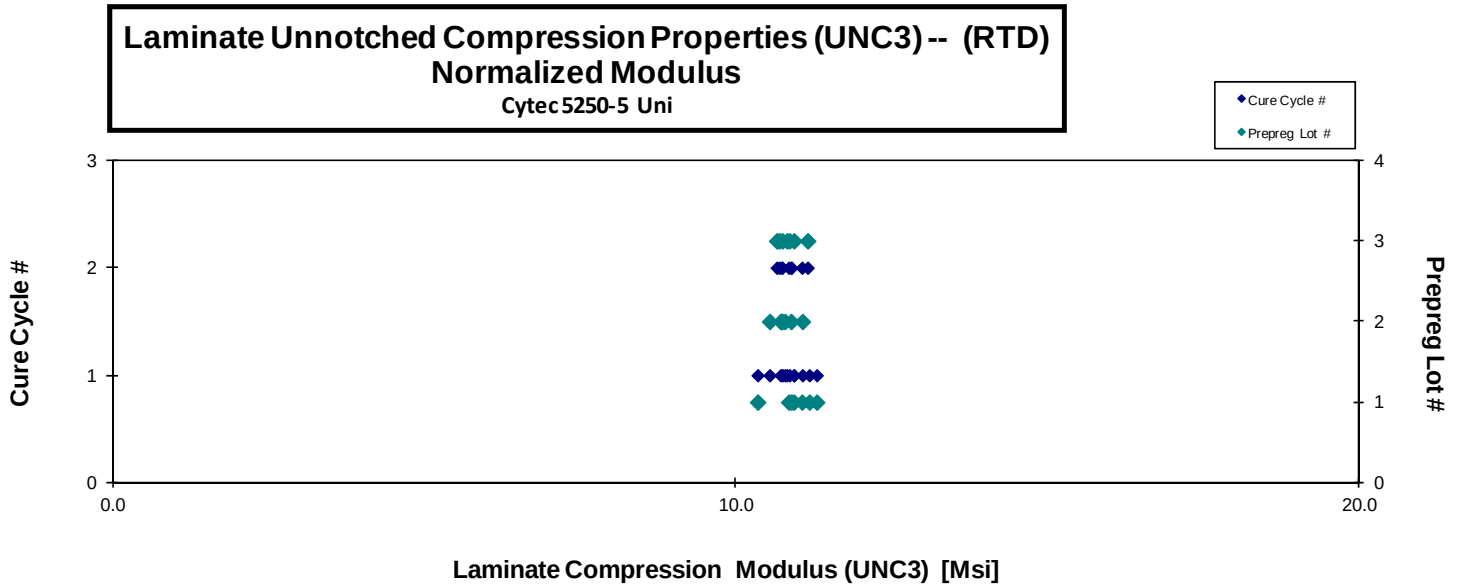
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle Batch #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAYA111A*	A	C1	1	1		11.314	0.106	20	END CRUSH	0.0053		10.928
CNAYA112A	A	C1	1	1	136.367	10.531	0.108	20	BGM	0.0054	134.002	10.348
CNAYA113A	A	C1	1	1	137.098	11.239	0.109	20	BGM	0.0055	136.350	11.177
CNAYA114A	A	C1	1	1	137.447	11.305	0.110	20	BAB	0.0055	137.343	11.296
CNAYA211A	A	C2	1	2	128.849	11.154	0.107	20	BGM	0.0053	125.296	10.847
CNAYA212A	A	C2	1	2	141.122	11.111	0.108	20	BGM	0.0054	138.299	10.889
CNAYA213A	A	C2	1	2	128.783	11.233	0.108	20	BAT	0.0054	126.793	11.060
CNAYB111A	B	C1	2	1	134.272	11.107	0.110	20	BGM	0.0055	133.793	11.067
CNAYB112A*	B	C1	2	1		10.587	0.110	20	HIT / BAB	0.0055		10.542
CNAYB113A	B	C1	2	1	135.783	10.778	0.109	20	BAB	0.0055	135.001	10.716
CNAYB114A	B	C1	2	1	138.514	10.841	0.109	20	BGM	0.0055	137.800	10.785
CNAYB115A**	B	C1	2	1	133.768		0.109	20	BGM	0.0055	132.724	
CNAYB211A	B	C2	2	2	136.037	11.086	0.107	20	BGM	0.0053	131.729	10.735
CNAYB212A	B	C2	2	2	139.166	10.982	0.108	20	BGM	0.0054	136.109	10.741
CNAYB213A	B	C2	2	2	134.689	11.075	0.108	20	BGM	0.0054	132.383	10.885
CNAYC111A	C	C1	3	1	133.869	11.225	0.107	20	BAB	0.0054	130.360	10.931
CNAYC112A	C	C1	3	1	146.912	10.991	0.108	20	BAB	0.0054	144.597	10.818
CNAYC113A	C	C1	3	1	133.403	10.949	0.109	20	BGM	0.0055	132.321	10.860
CNAYC114A*	C	C1	3	1		10.742	0.110	20	ENDCRUSH	0.0055		10.745
CNAYC115A**	C	C1	3	1	140.875		0.110	20	BAB	0.0055	141.217	
CNAYC211A	C	C2	3	2	140.006	10.808	0.108	20	BGM	0.0054	138.033	10.656
CNAYC212A	C	C2	3	2	135.691	11.167	0.110	20	BAB	0.0055	135.496	11.151
CNAYC213A	C	C2	3	2	136.730	10.623	0.111	20	BGM	0.0055	137.662	10.696

***Strength not reported due to bad failure.**
****Modulus not available because coupons were not gaged.**

Average	**136.469**	**10.993**
Standard Dev.	**4.138**	**0.240**
Coeff. of Var. [%]	**3.032**	**2.187**
Min.	**128.783**	**10.531**
Max.	**146.912**	**11.314**
Number of Spec.	**20**	**21**

$Average_{norm}$	**0.0054**	**134.865**	**10.851**
$Standard\ Dev._{norm}$		**4.528**	**0.220**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**3.358**	**2.031**
Min.	**0.0053**	**125.296**	**10.348**
Max.	**0.0055**	**144.597**	**11.296**
Number of Spec.		**20**	**21**


Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
50
100
150
200
Laminate Compression Strength (UNC3) [ksi]


Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
Laminate Compression Modulus (UNC3) [Msi]

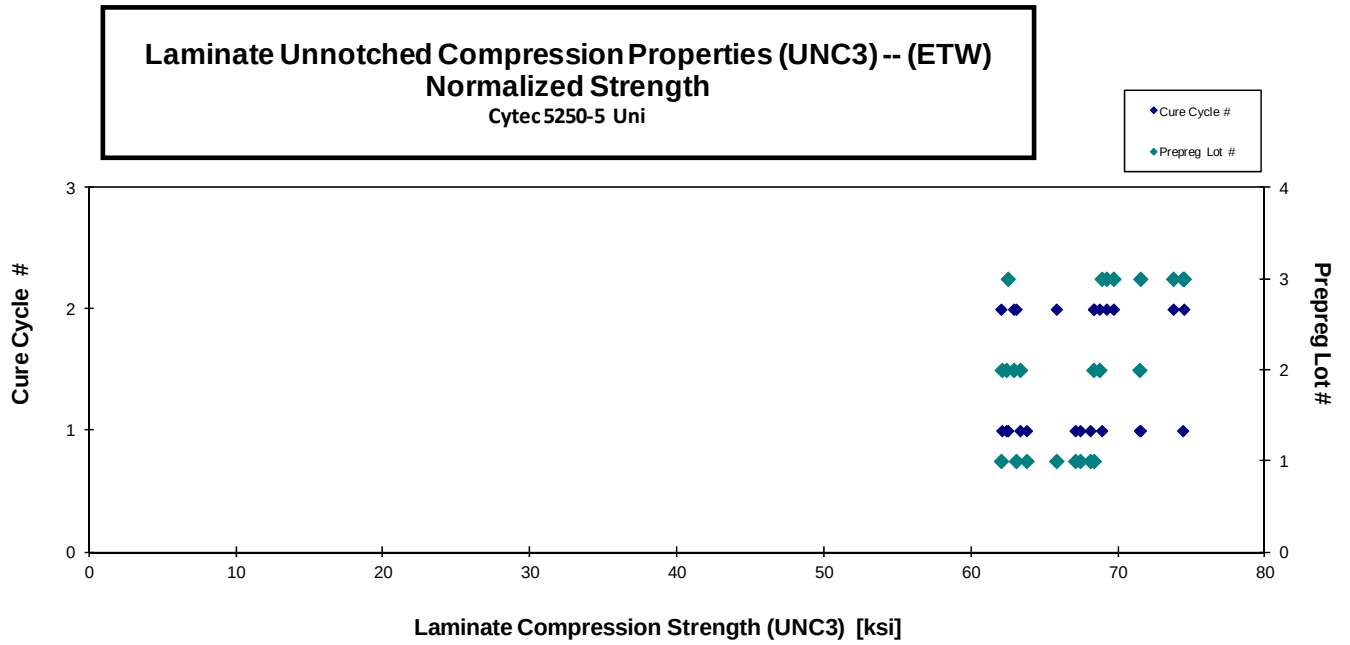
Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

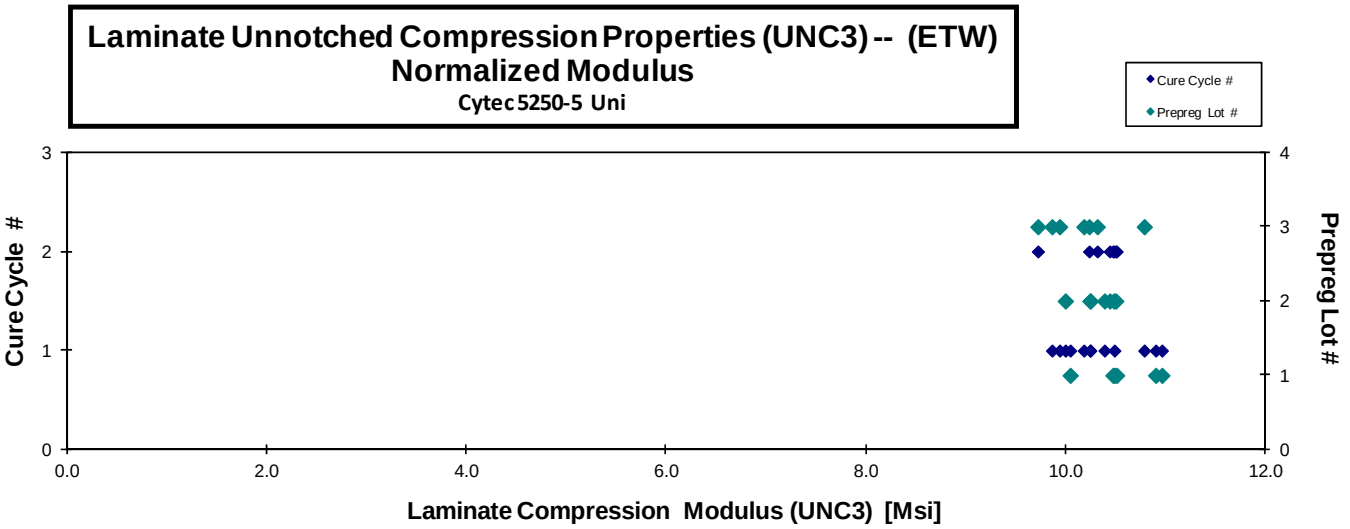
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
CNAYA117J	A	C1	1	1		10.857	0.110	20	BGM	0.0055		10.901
CNAYA118J	A	C1	1	1		10.434	0.111	20	BAB	0.0055		10.488
CNAYA119J	A	C1	1	1		11.252	0.107	20	BAB	0.0054		10.963
CNAYA11AJ	A	C1	1	1		10.165	0.109	20	BAB	0.0054		10.046
CNAYA11BJ	A	C1	1	1	63.926		0.110	20	BAB	0.0055	68.771	
CNAYA11CJ	A	C1	1	1	67.310		0.110	20	BAB	0.0055	67.417	
CNAYA11DJ	A	C1	1	1	66.960		0.110	20	BAB	0.0055	67.082	
CNAYA11EJ	A	C1	1	1	67.876		0.110	20	BAB	0.0055	68.102	
CNAYA217J	A	C2	1	2	68.428		0.110	20	HAB/HIB	0.0055	68.345	
CNAYA218J	A	C2	1	2		10.496	0.110	20	HAB	0.0055		10.474
CNAYA219J	A	C2	1	2		10.771	0.107	20	HAB	0.0054		10.510
CNAYA21AJ	A	C2	1	2	63.143		0.108	20	HAB/HIB	0.0054	62.034	
CNAYA21BJ	A	C2	1	2	66.684		0.109	20	HIB/HAB	0.0054	65.805	
CNAYA21CJ	A	C2	1	2	63.745		0.109	20	BGM	0.0054	63.060	
CNAYB117J	B	C1	2	1		10.417	0.108	20	HAB	0.0054		10.247
CNAYB118J	B	C1	2	1		10.276	0.107	20	HAB 1 / HIB 2	0.0054		9.997
CNAYB119J	B	C1	2	1		10.642	0.107	20	BAB	0.0054		10.389
CNAYB11AJ	B	C1	2	1		10.376	0.109	20	HAB	0.0054		10.244
CNAYB11BJ	B	C1	2	1	63.893		0.109	20	HAB	0.0055	63.331	
CNAYB11CJ	B	C1	2	1	62.750		0.109	20	HAB	0.0055	62.398	
CNAYB11DJ	B	C1	2	1	71.885		0.109	20	HAB 1 / HIB 2	0.0055	71.455	
CNAYB11EJ	B	C1	2	1	62.312		0.110	20	HAB 1 / HIB 2	0.0055	62.095	
CNAYB217J	B	C2	2	2		10.595	0.109	20	BAT	0.0054		10.481
CNAYB218J	B	C2	2	2		10.579	0.109	20	BAB 1 / HIB 2	0.0054		10.441
CNAYB219J	B	C2	2	2		10.976	0.105	20	BGM	0.0053		10.502
CNAYB21AJ	B	C2	2	2	71.248		0.106	20	HGM	0.0053	68.733	
CNAYB21BJ	B	C2	2	2	64.670		0.107	20	HGM 1 / HIB 2	0.0053	62.896	
CNAYB21CJ	B	C2	2	2	69.983		0.107	20	HAB 1 / HIB 2	0.0054	68.329	
CNAYC117J	C	C1	3	1		10.775	0.110	20	BAB	0.0055		10.787
CNAYC118J	C	C1	3	1		10.179	0.110	20	BAB	0.0055		10.182
CNAYC119J	C	C1	3	1		10.205	0.107	20	BAB	0.0054		9.939
CNAYC11AJ	C	C1	3	1		10.046	0.108	20	BAB	0.0054		9.863
CNAYC11BJ	C	C1	3	1	75.229		0.109	20	BAB	0.0054	74.397	
CNAYC11CJ	C	C1	3	1	71.781		0.110	20	HIB/BAB	0.0055	71.520	
CNAYC11DJ	C	C1	3	1	68.939		0.110	20	BAB	0.0055	68.886	
CNAYC11EJ	C	C1	3	1	62.432		0.110	20	BAB	0.0055	62.498	
CNAYC217J	C	C2	3	2		10.171	0.111	20	HIB	0.0055		10.235
CNAYC218J	C	C2	3	2		10.284	0.110	20	HAB	0.0055		10.317
CNAYC219J	C	C2	3	2		9.858	0.108	20	HIB/HAB	0.0054		9.722
CNAYC21AJ	C	C2	3	2	74.380		0.110	20	HAB	0.0055	74.475	
CNAYC21BJ	C	C2	3	2	69.217		0.111	20	HAB	0.0055	69.683	
CNAYC21CJ	C	C2	3	2	73.107		0.111	20	HAT/HIT	0.0055	73.749	
CNAYC21DJ	C	C2	3	2	68.629		0.111	20	HAB	0.0055	69.211	

Average	**67.762**	**10.468**	
Standard Dev.	**3.960**	**0.343**	
Coeff. of Var. [%]	**5.844**	**3.277**	
Min.	**62.312**	**9.858**	
Max.	**75.229**	**11.252**	
Number of Spec.	**23**	**20**	

$Average_{norm}$	**0.0055**	**67.360**	**10.336**
$Standard\ Dev._{norm}$		**4.073**	**0.329**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**6.046**	**3.185**
Min.	**0.0053**	**62.034**	**9.722**
Max.	**0.0055**	**74.475**	**10.963**
Number of Spec.		**23**	**20**


Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Strength (UNC3) [ksi]
0
10
20
30
40
50
60
70
80

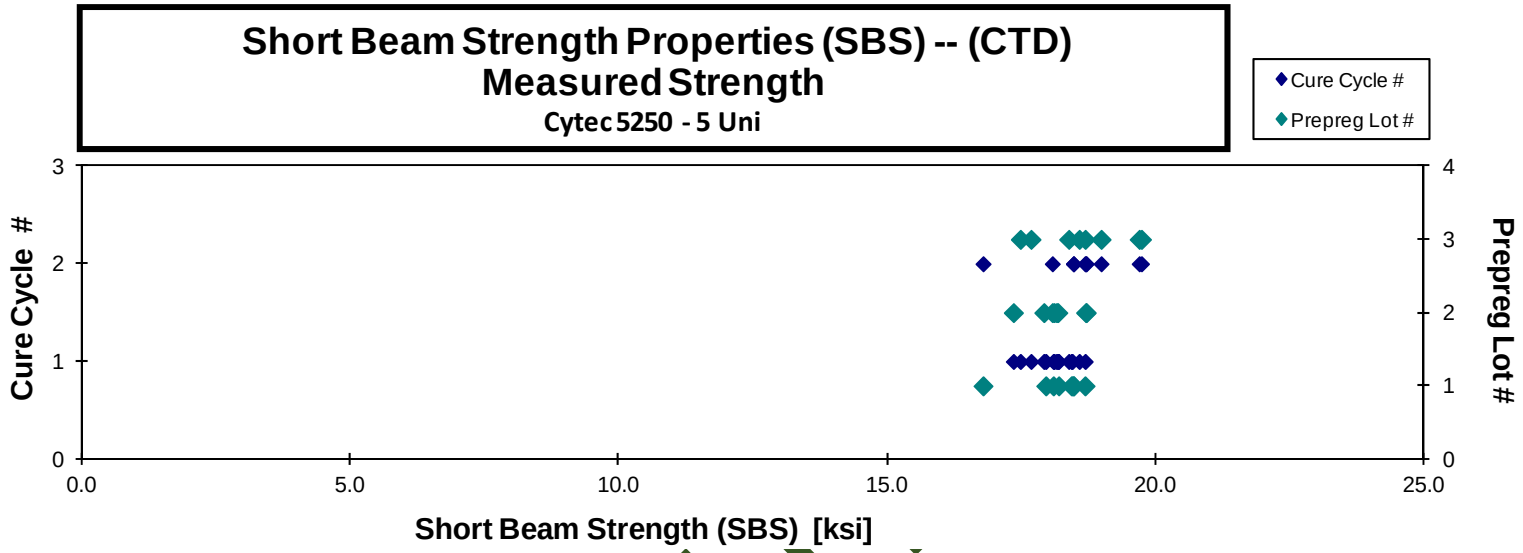

Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Normalized Modulus
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Compression Modulus (UNC3) [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0

4.14 Lamina Short-Beam Strength Properties (SBS)

Short Beam Strength Properties (SBS) -- (CTD) Strength
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode
CNAQA116B	A	C1	1	1	18.091	0.247	45	0.0055	INTERLAMINAR SHEAR/ TENSION
CNAQA117B	A	C1	1	1	18.191	0.244	45	0.0054	INTERLAMINAR SHEAR
CNAQA118B	A	C1	1	1	17.950	0.245	45	0.0054	INTERLAMINAR SHEAR
CNAQA119B	A	C1	1	1	18.426	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQA11AB	A	C1	1	1	18.443	0.243	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQA216B	A	C2	1	2	16.782	0.236	45	0.0052	INTERLAMINAR SHEAR
CNAQA217B	A	C2	1	2	18.682	0.240	45	0.0053	INTERLAMINAR SHEAR
CNAQA218B	A	C2	1	2	18.467	0.235	45	0.0052	INTERLAMINAR SHEAR/ TENSION
CNAQA219B	A	C2	1	2	18.466	0.238	45	0.0053	INTERLAMINAR SHEAR/ TENSION
CNAQB116B	B	C1	2	1	18.149	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQB117B	B	C1	2	1	18.175	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQB118B	B	C1	2	1	17.347	0.250	45	0.0056	INTERLAMINAR SHEAR/ TENSION
CNAQB119B	B	C1	2	1	18.107	0.249	45	0.0055	INTERLAMINAR SHEAR/ TENSION
CNAQB11AB	B	C1	2	1	17.915	0.249	45	0.0055	INTERLAMINAR SHEAR/ TENSION
CNAQB216B	B	C2	2	2	18.695	0.244	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQB217B	B	C2	2	2	18.705	0.245	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQB218B	B	C2	2	2	18.072	0.245	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQC116B	C	C1	3	1	17.675	0.241	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQC117B	C	C1	3	1	18.573	0.239	45	0.0053	INTERLAMINAR SHEAR
CNAQC118B	C	C1	3	1	18.379	0.241	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQC119B	C	C1	3	1	18.685	0.240	45	0.0053	INTERLAMINAR SHEAR/ TENSION
CNAQC11AB	C	C1	3	1	17.478	0.245	45	0.0055	INTERLAMINAR SHEAR
CNAQC216B	C	C2	3	2	18.981	0.242	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQC217B	C	C2	3	2	19.691	0.242	45	0.0054	INTERLAMINAR SHEAR/ TENSION
CNAQC218B	C	C2	3	2	19.733	0.242	45	0.0054	INTERLAMINAR SHEAR/ TENSION

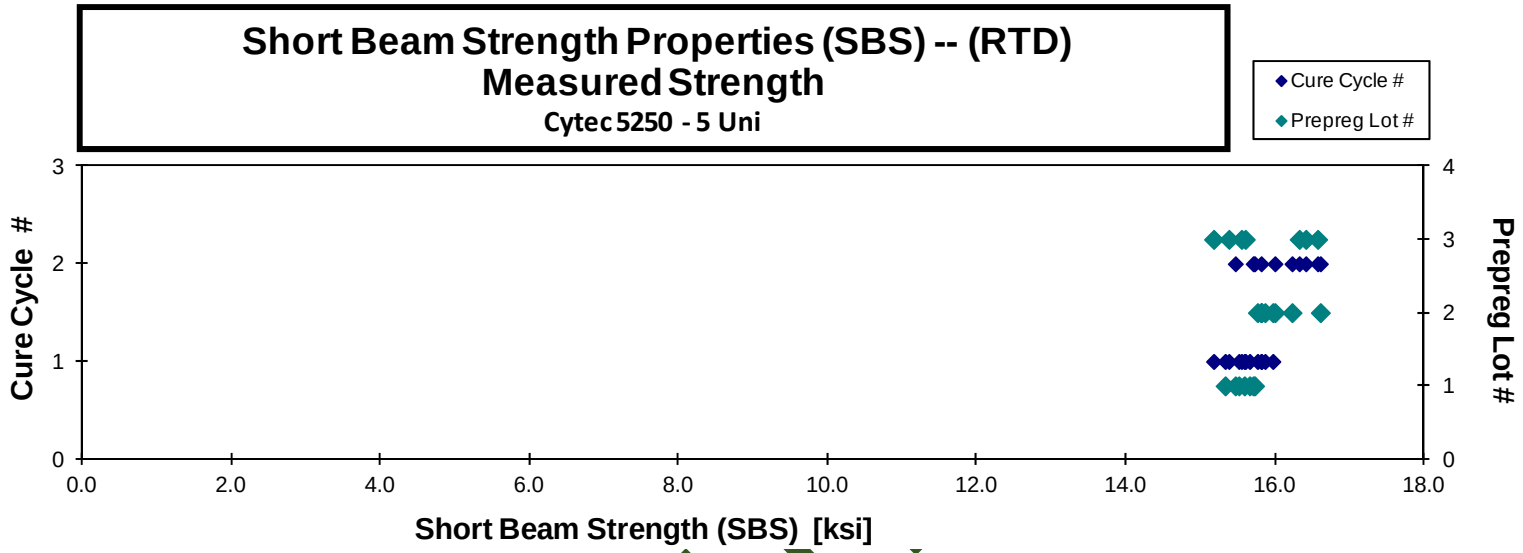
Average	**18.314**	**Average**	**0.0054**
Standard Dev.	**0.644**	**Standard Dev.**	
Coeff. of Var. [%]	**3.518**		
Min.	**16.782**	**Min.**	**0.0052**
Max.	**19.733**	**Max.**	**0.0056**
Number of Spec.	**25**	**Number of Spec.**	**25**


Short Beam Strength Properties (SBS) -- (CTD)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
Short Beam Strength (SBS) [ksi]

Short Beam Strength Properties (SBS) -- (RTD)
Strength
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. ply [in]	Failure Mode
CNAQA111A	A	C1	1	1	15.514	0.247	45	0.0055	INTERLAMINAR SHEAR
CNAQA112A	A	C1	1	1	15.588	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQA113A	A	C1	1	1	15.330	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQA114A	A	C1	1	1	15.658	0.247	45	0.0055	INTERLAMINAR SHEAR
CNAQA211A	A	C2	1	2	15.706	0.237	45	0.0053	INTERLAMINAR SHEAR
CNAQA212A	A	C2	1	2	15.466	0.238	45	0.0053	INTERLAMINAR SHEAR
CNAQA213A	A	C2	1	2	15.725	0.234	45	0.0052	INTERLAMINAR SHEAR
CNAQB111A	B	C1	2	1	15.764	0.252	45	0.0056	INTERLAMINAR SHEAR
CNAQB112A	B	C1	2	1	15.813	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQB113A	B	C1	2	1	15.970	0.250	45	0.0056	INTERLAMINAR SHEAR
CNAQB114A	B	C1	2	1	15.864	0.251	45	0.0056	INTERLAMINAR SHEAR
CNAQB115A	B	C1	2	1	15.815	0.249	45	0.0055	INTERLAMINAR SHEAR/ COMPRESSION
CNAQB211A	B	C2	2	2	16.608	0.239	45	0.0053	INTERLAMINAR SHEAR
CNAQB212A	B	C2	2	2	15.813	0.239	45	0.0053	INTERLAMINAR SHEAR
CNAQB213A	B	C2	2	2	16.227	0.241	45	0.0054	INTERLAMINAR SHEAR
CNAQB214A	B	C2	2	2	15.997	0.240	45	0.0053	INTERLAMINAR SHEAR
CNAQC111A	C	C1	3	1	15.175	0.234	45	0.0052	INTERLAMINAR SHEAR
CNAQC112A	C	C1	3	1	15.609	0.237	45	0.0053	INTERLAMINAR SHEAR
CNAQC113A	C	C1	3	1	15.380	0.243	45	0.0054	INTERLAMINAR SHEAR
CNAQC114A	C	C1	3	1	15.549	0.241	45	0.0054	INTERLAMINAR SHEAR
CNAQC211A	C	C2	3	2	16.324	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQC212A	C	C2	3	2	16.411	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQC213A	C	C2	3	2	16.571	0.248	45	0.0055	INTERLAMINAR SHEAR

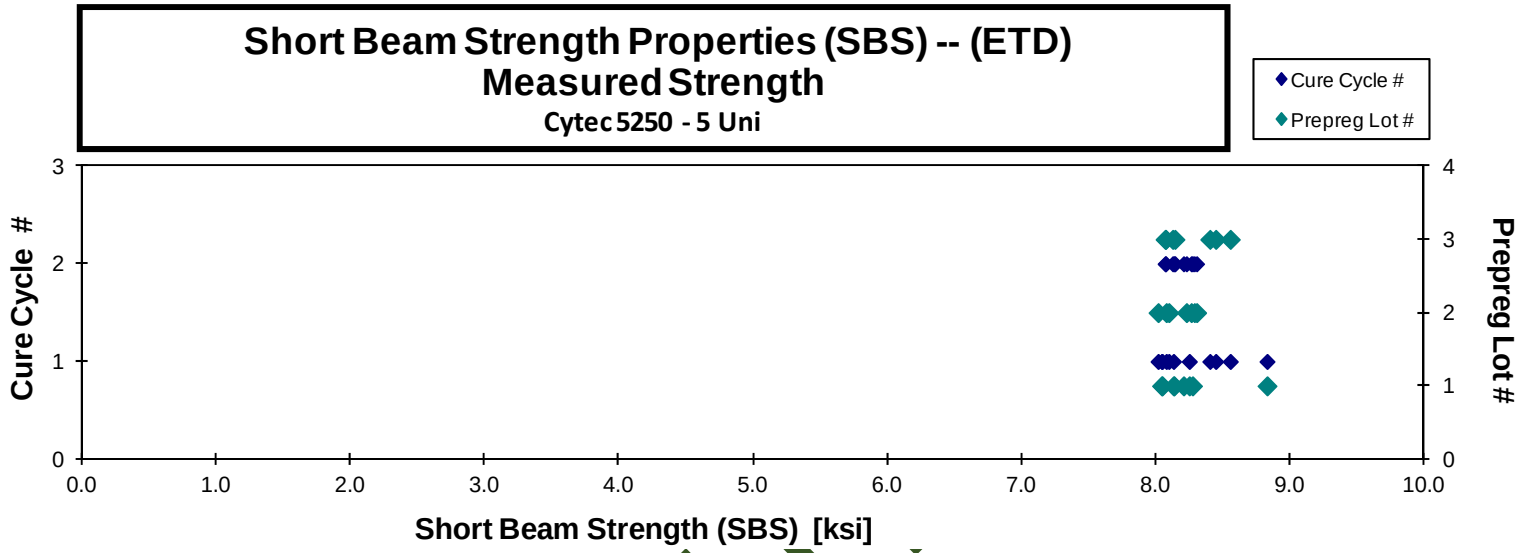
Average	**15.820**	**Average**	**0.0054**
Standard Dev.	**0.388**	**Standard Dev.**	
Coeff. of Var. [%]	**2.449**	**Coeff. of Var. [%]**	
Min.	**15.175**	**Min.**	**0.0052**
Max.	**16.608**	**Max.**	**0.0056**
Number of Spec.	**23**	**Number of Spec.**	**23**


Short Beam Strength Properties (SBS) -- (RTD)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
Short Beam Strength (SBS) [ksi]

Short Beam Strength Properties (SBS) -- (ETD)
Strength
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode
CNAQA11BK	A	C1	1	1	8.829	0.243	45	0.0054	INTERLAMINAR SHEAR
CNAQA11CK	A	C1	1	1	8.250	0.244	45	0.0054	INTERLAMINAR SHEAR
CNAQA11DK	A	C1	1	1	8.132	0.245	45	0.0055	INTERLAMINAR SHEAR
CNAQA11EK	A	C1	1	1	8.048	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQA11FK	A	C1	1	1	8.044	0.247	45	0.0055	INTERLAMINAR SHEAR
CNAQA21AK	A	C2	1	2	8.207	0.236	45	0.0053	INTERLAMINAR SHEAR
CNAQA21CK	A	C2	1	2	8.274	0.239	45	0.0053	INTERLAMINAR SHEAR
CNAQA21DK	A	C2	1	2	8.136	0.236	45	0.0052	INTERLAMINAR SHEAR
CNAQB11CK	B	C1	2	1	8.097	0.247	45	0.0055	INTERLAMINAR SHEAR
CNAQB11DK	B	C1	2	1	8.078	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQB11EK	B	C1	2	1	8.017	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQB219K	B	C2	2	2	8.229	0.245	45	0.0054	INTERLAMINAR SHEAR
CNAQB21AK	B	C2	2	2	8.304	0.245	45	0.0055	INTERLAMINAR SHEAR
CNAQB21CK	B	C2	2	2	8.264	0.245	45	0.0054	INTERLAMINAR SHEAR
CNAQB21DK	B	C2	2	2	8.287	0.245	45	0.0054	INTERLAMINAR SHEAR
CNAQC11BK	C	C1	3	1	8.555	0.245	45	0.0054	INTERLAMINAR SHEAR
CNAQC11CK	C	C1	3	1	8.403	0.243	45	0.0054	INTERLAMINAR SHEAR
CNAQC11DK	C	C1	3	1	8.446	0.246	45	0.0055	INTERLAMINAR SHEAR
CNAQC219K	C	C2	3	2	8.142	0.242	45	0.0054	INTERLAMINAR SHEAR
CNAQC21AK	C	C2	3	2	8.126	0.243	45	0.0054	INTERLAMINAR SHEAR
CNAQC21BK	C	C2	3	2	8.074	0.243	45	0.0054	INTERLAMINAR SHEAR
CNAQC21CK	C	C2	3	2	8.070	0.243	45	0.0054	INTERLAMINAR SHEAR

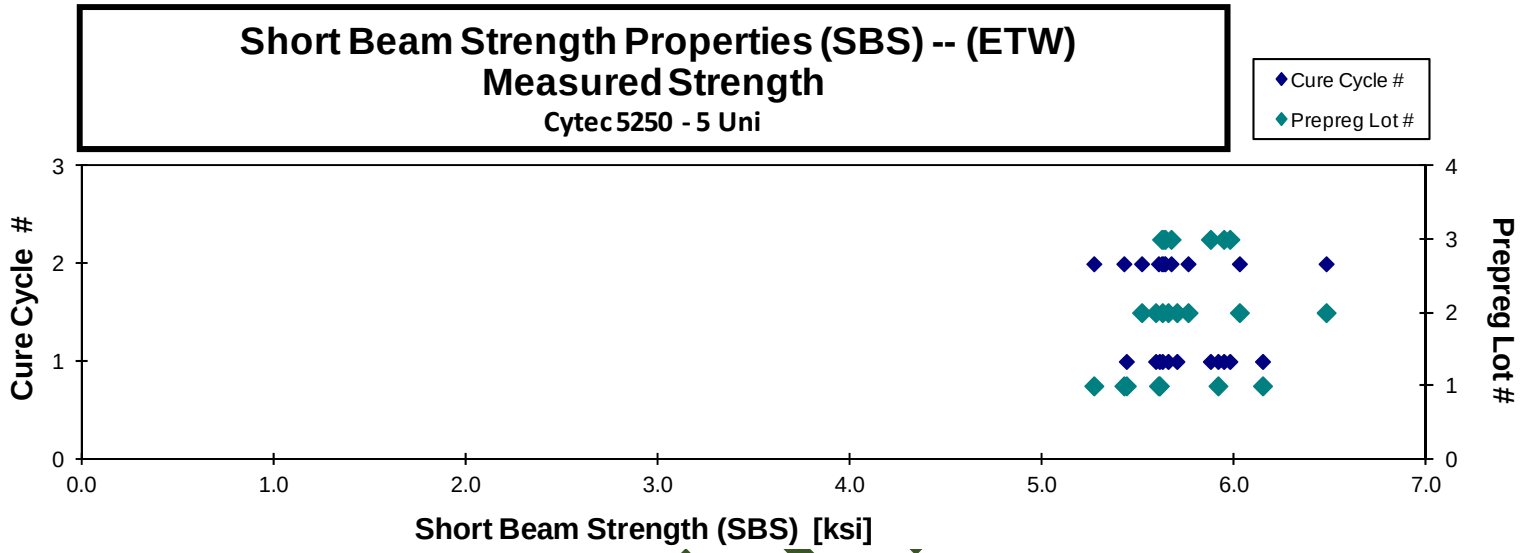
Average	**8.228**	**Average**	**0.0054**
Standard Dev.	**0.195**	**Standard Dev.**	
Coeff. of Var. [%]	**2.365**	**Coeff. of Var. [%]**	
Min.	**8.017**	**Min.**	**0.0052**
Max.	**8.829**	**Max.**	**0.0055**
Number of Spec.	**22**	**Number of Spec.**	**22**


Short Beam Strength Properties (SBS) -- (ETD)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
Short Beam Strength (SBS) [ksi]

Short Beam Strength Properties (SBS) -- (ETW)
Strength
Cytec 5250 - 5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. ply [in]	Failure Mode
CNAQA11GJ	A	C1	1	1	6.145	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQA11HJ	A	C1	1	1	5.913	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQA11IJ	A	C1	1	1	5.608	0.248	45	0.0055	INTERLAMINAR SHEAR
CNAQA11JJ	A	C1	1	1	5.436	0.249	45	0.0055	INTERLAMINAR SHEAR
CNAQA21EJ	A	C2	1	2	5.267	0.241	45	0.0053	INTERLAMINAR SHEAR
CNAQA21FJ	A	C2	1	2	5.603	0.241	45	0.0053	INTERLAMINAR SHEAR
CNAQA21GJ	A	C2	1	2	5.423	0.238	45	0.0053	INTERLAMINAR SHEAR
CNAQB11FJ	B	C1	2	1	5.653	0.247	45	0.0055	ILS / COMPRESSION
CNAQB11GJ	B	C1	2	1	5.589	0.248	45	0.0055	ILS / COMPRESSION
CNAQB11HJ	B	C1	2	1	5.699	0.249	45	0.0055	ILS / COMPRESSION
CNAQB11IJ	B	C1	2	1	5.623	0.250	45	0.0055	ILS / COMPRESSION
CNAQB21EJ	B	C2	2	2	6.476	0.243	45	0.0054	ILS / COMPRESSION
CNAQB21FJ	B	C2	2	2	6.025	0.243	45	0.0054	ILS / COMPRESSION
CNAQB21GJ	B	C2	2	2	5.757	0.243	45	0.0054	ILS / COMPRESSION
CNAQB21HJ	B	C2	2	2	5.516	0.244	45	0.0054	ILS / COMPRESSION
CNAQC11FJ	C	C1	3	1	5.943	0.240	45	0.0053	INTERLAMINAR SHEAR/COMPRESSION
CNAQC11HJ	C	C1	3	1	5.975	0.241	45	0.0054	INTERLAMINAR SHEAR/COMPRESSION
CNAQC11IJ	C	C1	3	1	5.874	0.240	45	0.0053	INTERLAMINAR SHEAR/COMPRESSION
CNAQC21EJ	C	C2	3	2	5.630	0.242	45	0.0054	INTERLAMINAR SHEAR/COMPRESSION
CNAQC21FJ	C	C2	3	2	5.629	0.242	45	0.0054	INTERLAMINAR SHEAR/COMPRESSION
CNAQC21GJ	C	C2	3	2	5.637	0.242	45	0.0054	INTERLAMINAR SHEAR/COMPRESSION
CNAQC21HJ	C	C2	3	2	5.669	0.243	45	0.0054	INTERLAMINAR SHEAR/COMPRESSION

Average	**5.731**	**Average**	**0.0054**
Standard Dev.	**0.269**	**Standard Dev.**	
Coeff. of Var. [%]	**4.696**	**Coeff. of Var. [%]**	
Min.	**5.267**	**Min.**	**0.0053**
Max.	**6.476**	**Max.**	**0.0055**
Number of Spec.	**22**	**Number of Spec.**	**22**

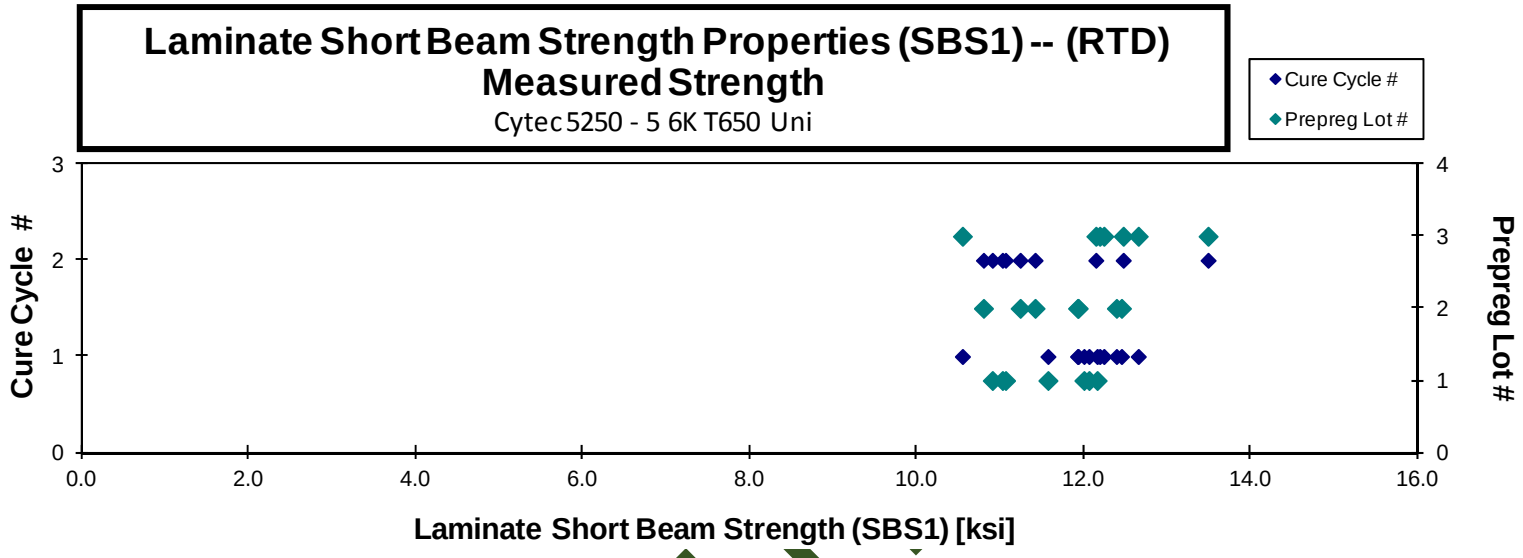

Short Beam Strength Properties (SBS) -- (ETW)
Measured Strength
Cytec 5250 - 5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Short Beam Strength (SBS) [ksi]
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
0
1
2
3
4

4.15 Laminate Short-Beam Strength Properties (SBS1)

Laminate Short Beam Strength Properties (SBS1) -- (RTD)
Strength
Cytec 5250 - 5 6K T650 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. ply [in]	Failure Mode
CNAqA1G1A	A	C1	1	1	12.161	0.175	32	0.0055	INTERLAMINAR SHEAR
CNAqA1G2A	A	C1	1	1	12.063	0.175	32	0.0055	INTERLAMINAR SHEAR
CNAqA1G3A	A	C1	1	1	12.003	0.175	32	0.0055	INTERLAMINAR SHEAR
CNAqA1G4A	A	C1	1	1	11.572	0.175	32	0.0055	INTERLAMINAR SHEAR
CNAqA2G2A	A	C2	1	2	11.064	0.172	32	0.0054	INTERLAMINAR SHEAR
CNAqA2G3A	A	C2	1	2	10.906	0.172	32	0.0054	INTERLAMINAR SHEAR
CNAqA2G4A	A	C2	1	2	11.026	0.172	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G3A	B	C1	2	1	11.927	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G4A	B	C1	2	1	12.392	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G5A	B	C1	2	1	12.452	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G6A	B	C1	2	1	11.934	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB2G2A	B	C2	2	2	11.417	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqB2G3A	B	C2	2	2	10.799	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqB2G4A	B	C2	2	2	11.239	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqC1G1A	C	C1	3	1	12.654	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqC1G2A	C	C1	3	1	10.547	0.172	32	0.0054	INTERLAMINAR SHEAR
CNAqC1G3A	C	C1	3	1	12.192	0.171	32	0.0054	INTERLAMINAR SHEAR
CNAqC1G4A	C	C1	3	1	12.241	0.170	32	0.0053	INTERLAMINAR SHEAR
CNAqC2G2A	C	C2	3	2	12.473	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqC2G3A	C	C2	3	2	13.490	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqC2G4A	C	C2	3	2	12.145	0.173	32	0.0054	INTERLAMINAR SHEAR

Average	**11.843**	**Average**	**0.0054**
Standard Dev.	**0.726**	**Standard Dev.**	
Coeff. of Var. [%]	**6.131**	**Coeff. of Var. [%]**	
Min.	**10.547**	**Min.**	**0.0053**
Max.	**13.490**	**Max.**	**0.0055**
Number of Spec.	**21**	**Number of Spec.**	**21**

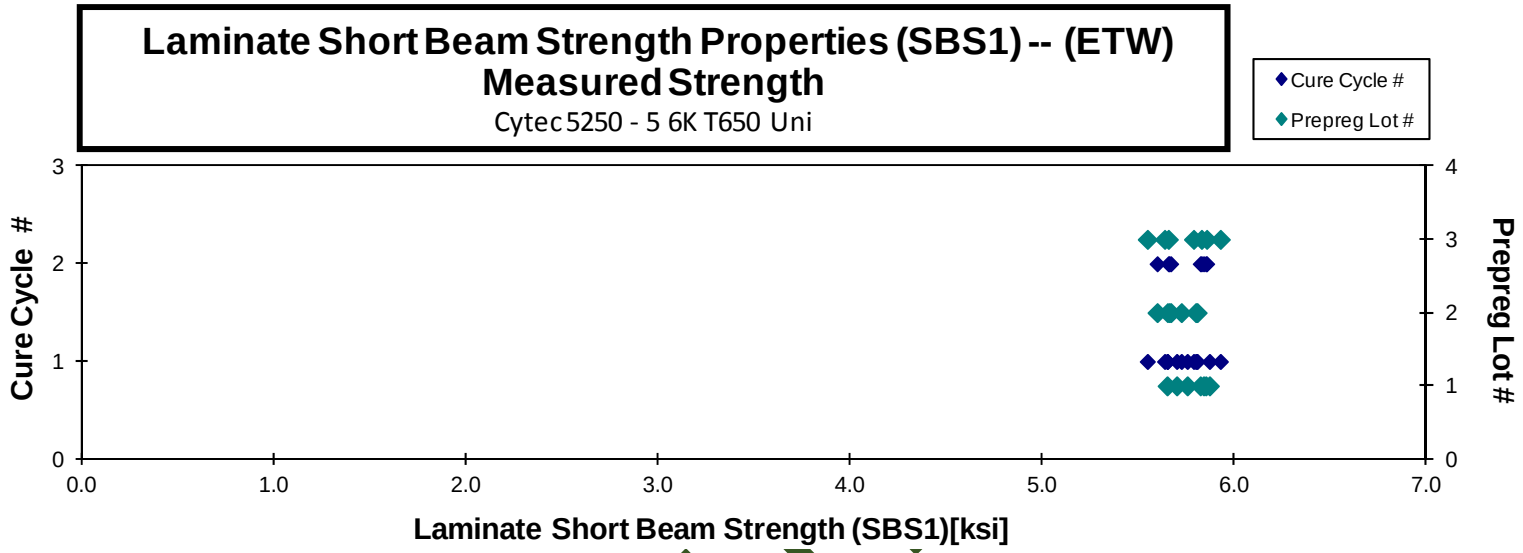

Laminate Short Beam Strength Properties (SBS1) -- (RTD)
Measured Strength
Cytec 5250 - 5 6K T650 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
Laminate Short Beam Strength (SBS1) [ksi]

Laminate Short Beam Strength Properties (SBS1) -- (ETW) Strength

Cytec 5250 - 5 6K T650 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode
CNAqA1G8J	A	C1	1	1	5.753	0.177	32	0.0055	INTERLAMINAR SHEAR
CNAqA1GAJ	A	C1	1	1	5.698	0.177	32	0.0055	INTERLAMINAR SHEAR
CNAqA1GBJ	A	C1	1	1	5.648	0.177	32	0.0055	INTERLAMINAR SHEAR
CNAqA1GCJ	A	C1	1	1	5.869	0.177	32	0.0055	INTERLAMINAR SHEAR
CNAqA2G8J	A	C2	1	2	5.849	0.176	32	0.0055	INTERLAMINAR SHEAR
CNAqA2G9J	A	C2	1	2	5.821	0.176	32	0.0055	INTERLAMINAR SHEAR
CNAqA2GAJ	A	C2	1	2	5.838	0.176	32	0.0055	INTERLAMINAR SHEAR
CNAqB1G7J	B	C1	2	1	5.798	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G8J	B	C1	2	1	5.650	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1G9J	B	C1	2	1	5.805	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB1GAJ	B	C1	2	1	5.722	0.173	32	0.0054	INTERLAMINAR SHEAR
CNAqB2G6J	B	C2	2	2	5.596	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqB2G7J	B	C2	2	2	5.659	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqB2G8J	B	C2	2	2	5.667	0.168	32	0.0053	INTERLAMINAR SHEAR
CNAqC1G6J	C	C1	3	1	5.926	0.168	32	0.0052	INTERLAMINAR SHEAR
CNAqC1G7J	C	C1	3	1	5.635	0.167	32	0.0052	INTERLAMINAR SHEAR
CNAqC1G9J	C	C1	3	1	5.786	0.170	32	0.0053	INTERLAMINAR SHEAR
CNAqC1GAJ	C	C1	3	1	5.545	0.169	32	0.0053	INTERLAMINAR SHEAR
CNAqC2G7J	C	C2	3	2	5.827	0.174	32	0.0054	INTERLAMINAR SHEAR
CNAqC2G8J	C	C2	3	2	5.655	0.174	32	0.0054	INTERLAMINAR SHEAR
CNAqC2G9J	C	C2	3	2	5.854	0.174	32	0.0054	INTERLAMINAR SHEAR

Average	**5.743**	**Average**	**0.0054**
Standard Dev.	**0.104**	**Standard Dev.**	
Coeff. of Var. [%]	**1.812**	**Coeff. of Var. [%]**	
Min.	**5.545**	**Min.**	**0.0052**
Max.	**5.926**	**Max.**	**0.0055**
Number of Spec.	**21**	**Number of Spec.**	**21**


Laminate Short Beam Strength Properties (SBS1) -- (ETW)
Measured Strength
Cytec 5250 - 5 6K T650 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
Laminate Short Beam Strength (SBS1)[ksi]

4.16 "25/50/25" Open-Hole Tension 1 Properties (OHT1)

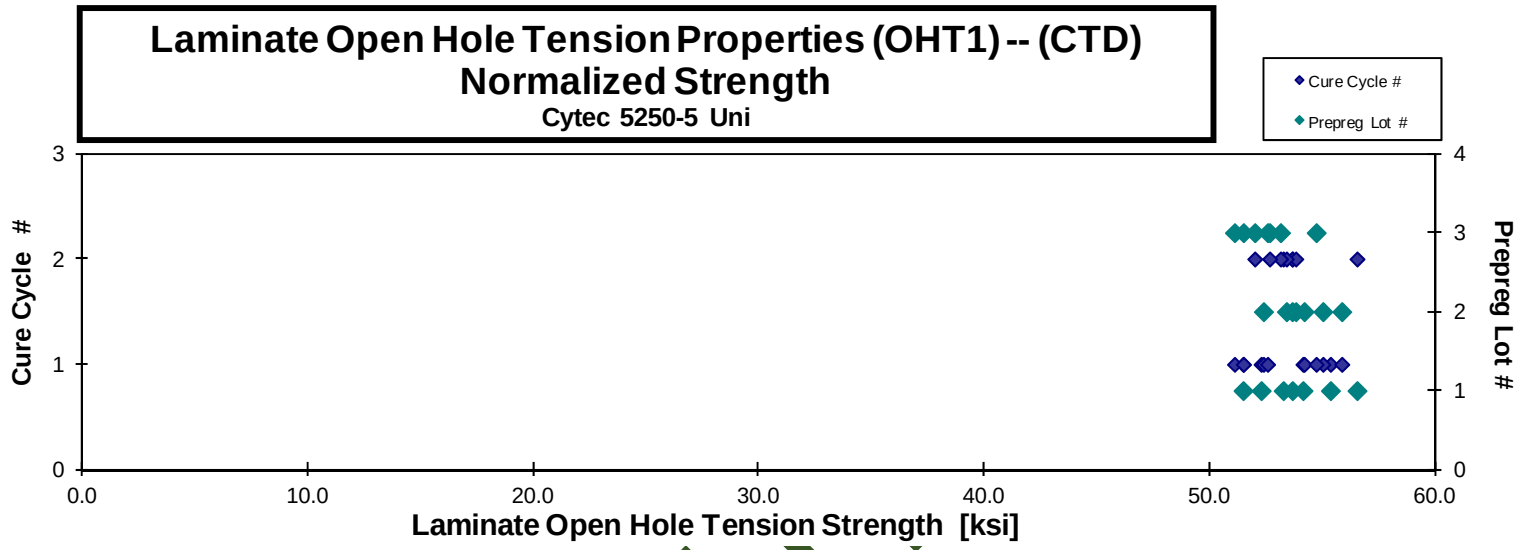
Laminate Open Hole Tension Properties (OHT1) -- (CTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNADA115B	A	C1	1	1	51.552	0.088	16	MGM	0.0055	51.484
CNADA116B	A	C1	1	1	55.643	0.088	16	MGM	0.0055	55.358
CNADA117B	A	C1	1	1	52.541	0.088	16	LGM	0.0055	52.282
CNADA118B	A	C1	1	1	56.314	0.085	16	LGM	0.0053	54.138
CNADA215B	A	C2	1	2	52.057	0.090	16	LGM	0.0056	53.260
CNADA216B	A	C2	1	2	53.573	0.088	16	LGM	0.0055	53.664
CNADA217B	A	C2	1	2	57.762	0.086	16	LGM	0.0054	56.536
CNADB115B	B	C1	2	1	54.827	0.088	16	LGM	0.0055	55.024
CNADB116B	B	C1	2	1	53.623	0.089	16	LGM	0.0056	54.192
CNADB117B	B	C1	2	1	53.667	0.086	16	LGM	0.0054	52.386
CNADB118B	B	C1	2	1	56.417	0.087	16	LGM	0.0054	55.861
CNADB215B	B	C2	2	2	53.905	0.088	16	LGM	0.0055	53.660
CNADB216B	B	C2	2	2	53.942	0.088	16	LGM	0.0055	53.820
CNADB217B	B	C2	2	2	54.835	0.086	16	LGM	0.0054	53.402
CNADC115B	C	C1	3	1	52.331	0.088	16	LGM	0.0055	52.569
CNADC116B	C	C1	3	1	55.589	0.087	16	LGM	0.0054	54.726
CNADC117B	C	C1	3	1	50.555	0.089	16	LGM	0.0056	51.101
CNADC118B	C	C1	3	1	51.829	0.087	16	LGM	0.0055	51.496
CNADC215B	C	C2	3	2	53.877	0.087	16	LGM	0.0054	53.142
CNADC216B	C	C2	3	2	53.500	0.087	16	LGM	0.0054	52.659
CNADC217B	C	C2	3	2	53.067	0.086	16	LGM	0.0054	52.002

Average	53.876	
Standard Dev.	1.795	
Coeff. of Var. [%]	3.333	
Min.	50.555	
Max.	57.762	
Number of Spec.	21	

$Average_{norm}$	0.0055	53.465
$Standard\ Dev._{norm}$		1.478
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.764
Min.	0.0053	51.101
Max.	0.0056	56.536
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT1) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
Laminate Open Hole Tension Strength [ksi]

Laminate Open Hole Tension Properties (OHT1) -- (RTD) Strength

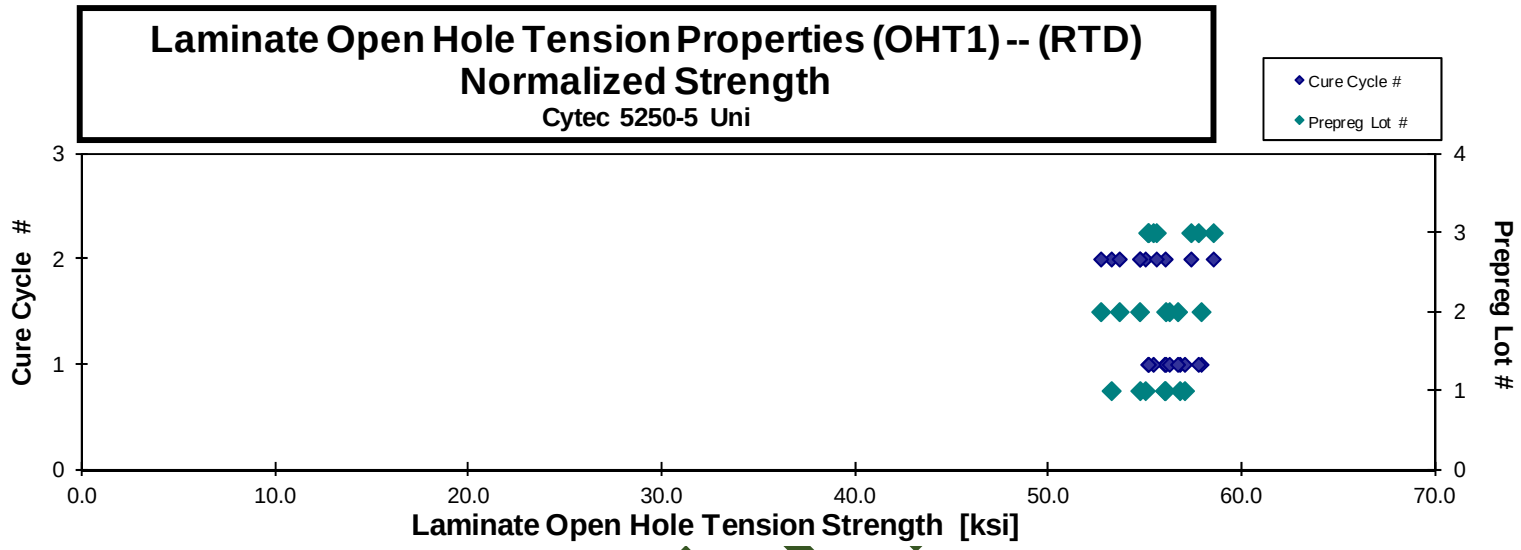
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNADA111A	A	C1	1	1	58.057	0.086	16	LGM	0.0054	56.782
CNADA112A	A	C1	1	1	56.713	0.087	16	LGM / AGM	0.0054	55.993
CNADA114A	A	C1	1	1	57.325	0.088	16	LGM / AGM	0.0055	57.032
CNADA211A	A	C2	1	2	56.791	0.087	16	LGM / AGM	0.0054	56.027
CNADA212A	A	C2	1	2	54.719	0.088	16	LGM / AGM	0.0055	54.719
CNADA213A	A	C2	1	2	52.217	0.090	16	LGM / AGM	0.0056	53.235
CNADA214A	A	C2	1	2	53.966	0.090	16	LGM / AGM	0.0056	54.998
CNADB111A	B	C1	2	1	57.293	0.086	16	LGM / AGM	0.0054	56.056
CNADB112A	B	C1	2	1	58.086	0.088	16	LGM / AGM	0.0055	57.888
CNADB113A	B	C1	2	1	56.399	0.088	16	LGM / AGM	0.0055	56.239
CNADB114A	B	C1	2	1	56.779	0.088	16	LGM / AGM	0.0055	56.672
CNADB211A	B	C2	2	2	55.136	0.086	16	LGM / AGM	0.0054	53.653
CNADB212A	B	C2	2	2	55.035	0.087	16	LGM / AGM	0.0055	54.705
CNADB213A	B	C2	2	2	53.046	0.087	16	LGM / AGM	0.0055	52.694
CNADC111A	C	C1	3	1	53.547	0.091	16	LGM / AGM	0.0057	55.130
CNADC112A	C	C1	3	1	54.680	0.089	16	LGM / AGM	0.0056	55.405
CNADC113A	C	C1	3	1	57.897	0.088	16	LGM / AGM	0.0055	57.744
CNADC114A	C	C1	3	1	54.643	0.089	16	LGM / AGM	0.0056	55.161
CNADC211A	C	C2	3	2	57.138	0.086	16	LGM / AGM	0.0053	55.568
CNADC212A	C	C2	3	2	58.096	0.087	16	LGM / AGM	0.0054	57.359
CNADC213A	C	C2	3	2	58.862	0.087	16	LGM / AGM	0.0055	58.517

Average	56.020	
Standard Dev.	1.890	
Coeff. of Var. [%]	3.375	
Min.	52.217	
Max.	58.862	
Number of Spec.	21	

$Average_{norm}$	0.0055	55.789
$Standard\ Dev._{norm}$		1.524
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.732
Min.	0.0053	52.694
Max.	0.0057	58.517
Number of Spec.		21

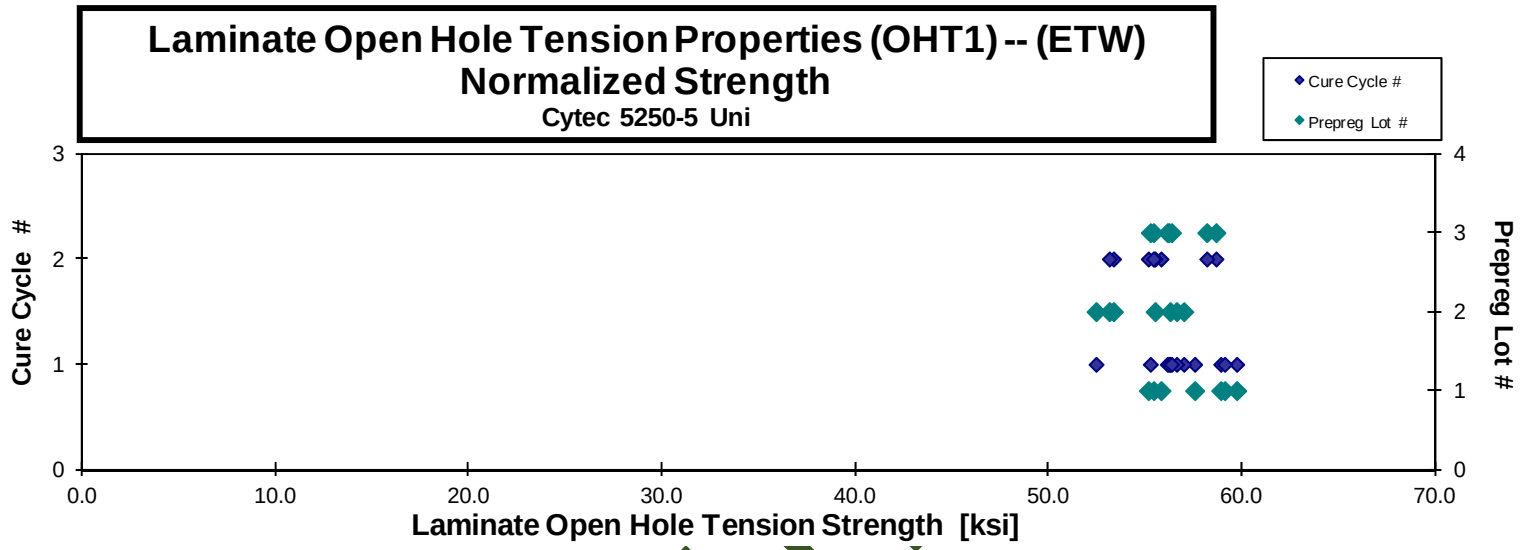

Laminate Open Hole Tension Properties (OHT1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
Laminate Open Hole Tension Strength [ksi]

Laminate Open Hole Tension Properties (OHT1) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNADA119J	A	C1	1	1	57.809	0.088	16	AGM	0.0055	57.557
CNADA11AJ	A	C1	1	1	59.400	0.087	16	AGM	0.0055	58.905
CNADA11BJ	A	C1	1	1	60.362	0.087	16	AGM	0.0054	59.733
CNADA11CJ	A	C1	1	1	59.131	0.088	16	AGM	0.0055	59.108
CNADA218J	A	C2	1	2	55.875	0.087	16	AGM	0.0055	55.431
CNADA219J	A	C2	1	2	55.202	0.088	16	AGM	0.0055	55.160
CNADA21AJ	A	C2	1	2	55.657	0.088	16	AGM	0.0055	55.815
CNADB119J	B	C1	2	1	56.416	0.088	16	AGM	0.0055	56.288
CNADB11AJ	B	C1	2	1	52.623	0.088	16	AGM	0.0055	52.454
CNADB11BJ	B	C1	2	1	56.565	0.089	16	AGM	0.0055	56.994
CNADB11CJ	B	C1	2	1	55.963	0.089	16	AGM	0.0056	56.620
CNADB218J	B	C2	2	2	54.227	0.087	16	AGM	0.0054	53.354
CNADB219J	B	C2	2	2	56.221	0.087	16	AGM	0.0054	55.508
CNADB21AJ	B	C2	2	2	53.578	0.087	16	AGM	0.0055	53.141
CNADC119J	C	C1	3	1	56.069	0.088	16	AGM	0.0055	56.143
CNADC11AJ	C	C1	3	1	57.529	0.086	16	AGM	0.0054	56.222
CNADC11BJ	C	C1	3	1	56.560	0.088	16	AGM	0.0055	56.357
CNADC11CJ	C	C1	3	1	55.200	0.088	16	AGM	0.0055	55.263
CNADC218J	C	C2	3	2	58.815	0.088	16	AGM	0.0055	58.659
CNADC219J	C	C2	3	2	58.041	0.088	16	AGM	0.0055	58.184
CNADC21AJ	C	C2	3	2	55.881	0.087	16	AGM	0.0055	55.425

	Strength		$Strength_{norm}$
Average	56.530	$Average_{norm}$	56.301
Standard Dev.	1.935	$Standard\ Dev._{norm}$	1.949
Coeff. of Var. [%]	3.423	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.462
Min.	52.623	Min.	52.454
Max.	60.362	Max.	59.733
Number of Spec.	21	Number of Spec.	21


Laminate Open Hole Tension Properties (OHT1) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
Laminate Open Hole Tension Strength [ksi]

4.17 "10/80/10" Open-Hole Tension 2 Properties (OHT2)

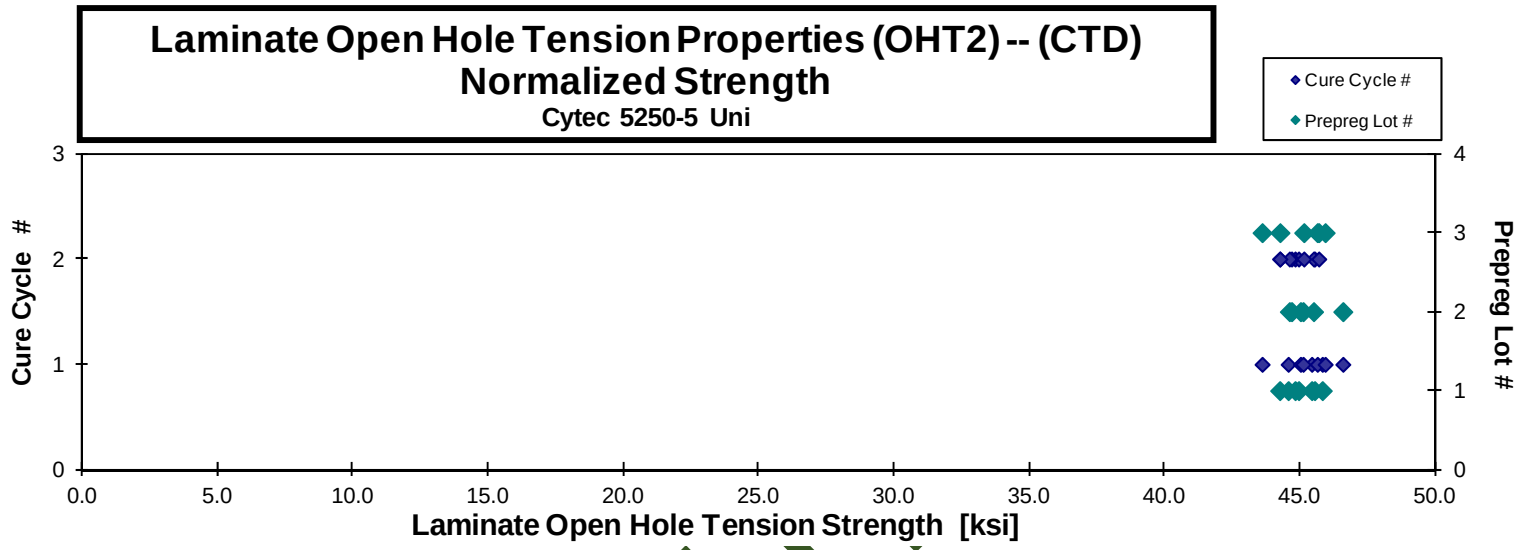
Laminate Open Hole Tension Properties (OHT2) -- (CTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]
0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAEA114B	A	C1	1	1	46.025	0.110	20	AGM	0.0055	45.829
CNAEA115B	A	C1	1	1	45.533	0.110	20	AGM	0.0055	45.436
CNAEA116B	A	C1	1	1	44.500	0.110	20	AGM	0.0055	44.568
CNAEA216B	A	C2	1	2	44.424	0.111	20	AGM	0.0055	44.821
CNAEA217B	A	C2	1	2	44.954	0.110	20	AGM	0.0055	44.954
CNAEA218B	A	C2	1	2	43.440	0.112	20	AGM	0.0056	44.256
CNAEA219B	A	C2	1	2	44.620	0.112	20	AGM	0.0056	45.546
CNAEB115B	B	C1	2	1	46.695	0.110	20	MGM	0.0055	46.589
CNAEB116B	B	C1	2	1	45.200	0.110	20	MGM	0.0055	45.022
CNAEB117B	B	C1	2	1	45.897	0.108	20	MGM	0.0054	45.118
CNAEB215B	B	C2	2	2	46.029	0.109	20	MGM	0.0054	45.506
CNAEB216B	B	C2	2	2	45.383	0.108	20	MGM	0.0054	44.695
CNAEB217B	B	C2	2	2	45.950	0.107	20	MGM	0.0053	44.613
CNAEC115B	C	C1	3	1	46.085	0.109	20	MGM	0.0054	45.645
CNAEC116B	C	C1	3	1	46.201	0.109	20	MGM	0.0055	45.935
CNAEC117B	C	C1	3	1	44.736	0.107	20	MGM	0.0054	43.604
CNAEC215B	C	C2	3	2	45.693	0.109	20	MGM	0.0054	45.146
CNAEC216B	C	C2	3	2	46.696	0.108	20	MGM	0.0054	45.699
CNAEC217B	C	C2	3	2	46.174	0.105	20	MGM	0.0053	44.264

Average	**45.486**	
Standard Dev.	**0.858**	
Coeff. of Var. [%]	**1.887**	
Min.	**43.440**	
Max.	**46.696**	
Number of Spec.	**19**	

$Average_{norm}$	**0.0055**	**45.118**
$Standard\ Dev._{norm}$		**0.708**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**1.568**
Min.	**0.0053**	**43.604**
Max.	**0.0056**	**46.589**
Number of Spec.		**19**


Laminate Open Hole Tension Properties (OHT2) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
Laminate Open Hole Tension Strength [ksi]

Laminate Open Hole Tension Properties (OHT2) -- (RTD) Strength

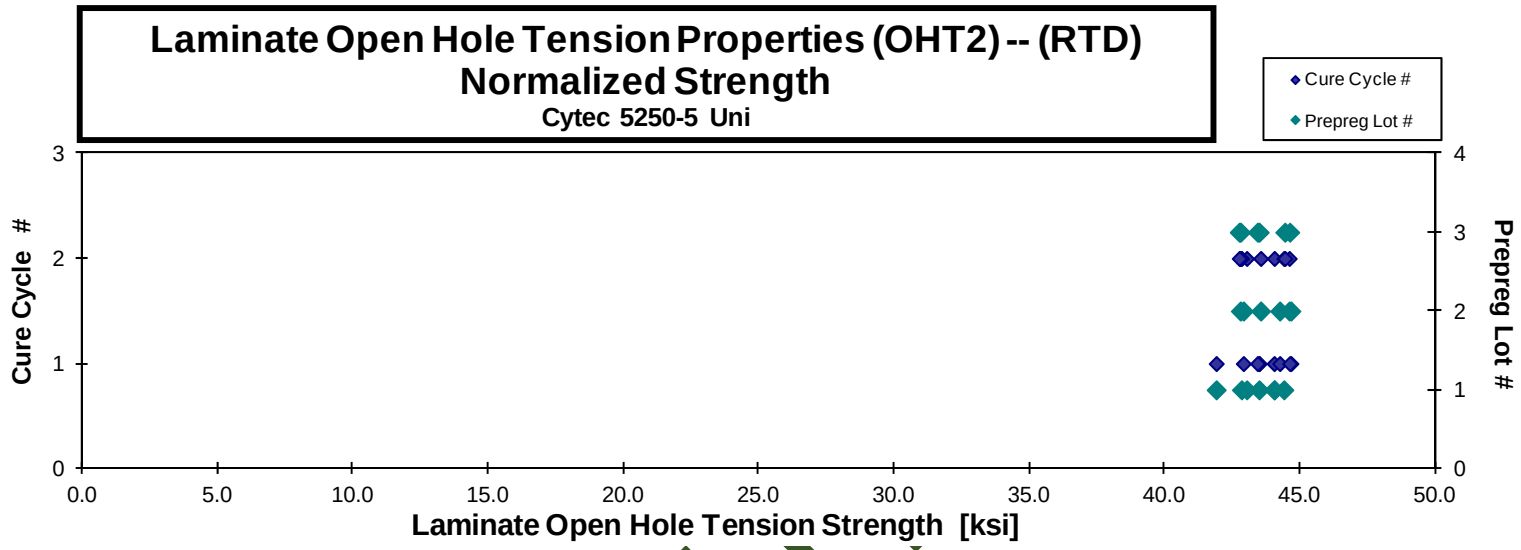
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAEA111A	A	C1	1	1	43.415	0.106	20	AGM	0.0053	41.909
CNAEA112A	A	C1	1	1	44.391	0.109	20	AGM	0.0055	44.048
CNAEA113A	A	C1	1	1	43.229	0.111	20	AGM	0.0055	43.491
CNAEA211A	A	C2	1	2	42.748	0.111	20	AGM	0.0055	43.033
CNAEA212A	A	C2	1	2	42.629	0.111	20	AGM	0.0055	42.842
CNAEA213A	A	C2	1	2	43.790	0.111	20	AGM	0.0055	44.056
CNAEA214A	A	C2	1	2	43.699	0.112	20	AGM	0.0056	44.408
CNAEB111A	B	C1	2	1	44.012	0.107	20	AGM	0.0054	42.912
CNAEB112A	B	C1	2	1	44.324	0.110	20	AGM	0.0055	44.256
CNAEB113A	B	C1	2	1	44.650	0.110	20	AGM	0.0055	44.670
CNAEB211A	B	C2	2	2	45.067	0.106	20	AGM	0.0053	43.551
CNAEB212A	B	C2	2	2	45.370	0.108	20	AGM	0.0054	44.607
CNAEB213A	B	C2	2	2	43.271	0.109	20	AGM	0.0054	42.799
CNAEC111A	C	C1	3	1	43.667	0.110	20	AGM	0.0055	43.495
CNAEC112A	C	C1	3	1	43.733	0.109	20	AGM	0.0055	43.435
CNAEC113A	C	C1	3	1	44.986	0.109	20	AGM	0.0055	44.624
CNAEC211A	C	C2	3	2	45.183	0.108	20	AGM	0.0054	44.444
CNAEC212A	C	C2	3	2	43.477	0.108	20	AGM	0.0054	42.806
CNAEC213A	C	C2	3	2	43.338	0.109	20	AGM	0.0054	42.761

Average	43.946	
Standard Dev.	0.815	
Coeff. of Var. [%]	1.854	
Min.	42.629	
Max.	45.370	
Number of Spec.	19	

$Average_{norm}$	0.00546	43.587
$Standard\ Dev._{norm}$		0.805
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.847
Min.	0.0053	41.909
Max.	0.0056	44.670
Number of Spec.		19


Laminate Open Hole Tension Properties (OHT2) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
Laminate Open Hole Tension Strength [ksi]

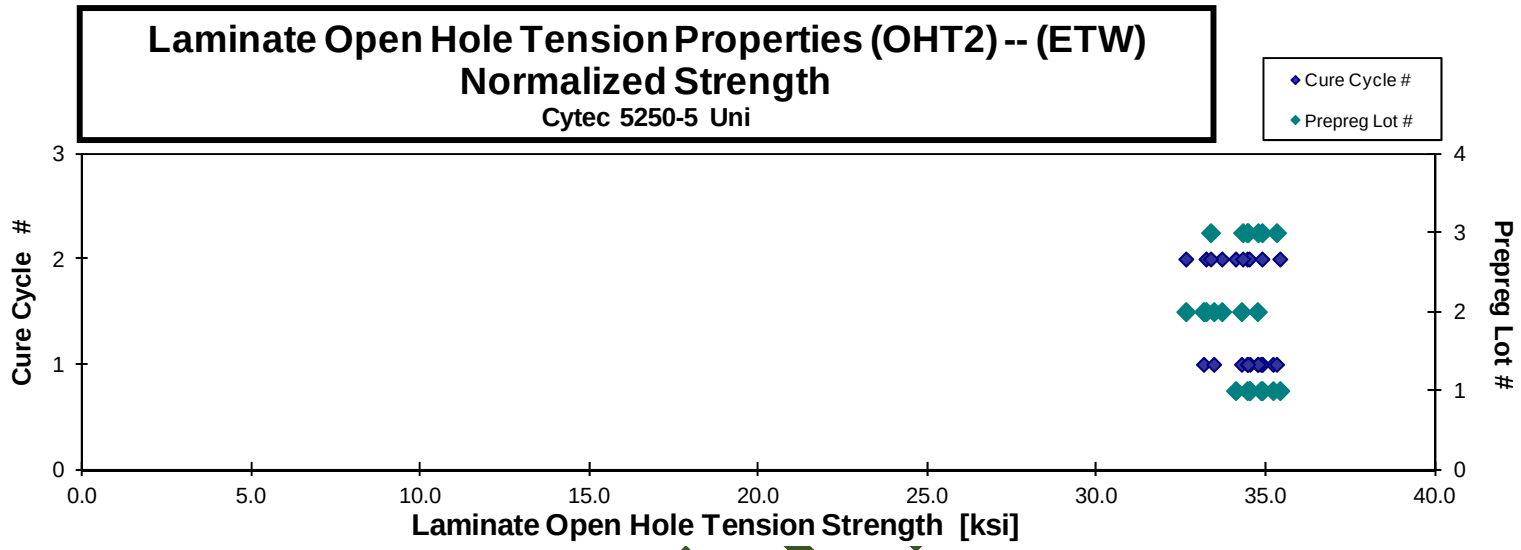
Laminate Open Hole Tension Properties (OHT2) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAEA117J	A	C1	1	1	36.480	0.105	20	AGM	0.0053	34.888
CNAEA118J	A	C1	1	1	35.020	0.108	20	AGM	0.0054	34.521
CNAEA119J	A	C1	1	1	35.413	0.109	20	AGM	0.0055	35.204
CNAEA11AJ	A	C1	1	1	35.170	0.109	20	AGM	0.0054	34.845
CNAEA21AJ	A	C2	1	2	31.899	0.119	20	AGM	0.0059	34.442
CNAEA21BJ	A	C2	1	2	32.055	0.117	20	AGM	0.0059	34.100
CNAEA21CJ	A	C2	1	2	32.251	0.118	20	AGM	0.0059	34.498
CNAEA21DJ	A	C2	1	2	34.021	0.114	20	AGM	0.0057	35.408
CNAEB119J	B	C1	2	1	34.765	0.110	20	AGM	0.0055	34.744
CNAEB11AJ	B	C1	2	1	33.218	0.110	20	AGM	0.0055	33.152
CNAEB11BJ	B	C1	2	1	33.514	0.110	20	AGM	0.0055	33.453
CNAEB11CJ	B	C1	2	1	34.368	0.110	20	AGM	0.0055	34.275
CNAEB219J	B	C2	2	2	33.550	0.109	20	AGM	0.0054	33.225
CNAEB21AJ	B	C2	2	2	33.191	0.108	20	AGM	0.0054	32.628
CNAEB21BJ	B	C2	2	2	34.268	0.108	20	AGM	0.0054	33.692
CNAEC119J	C	C1	3	1	34.878	0.110	20	AGM	0.0055	34.762
CNAEC11AJ	C	C1	3	1	34.764	0.109	20	AGM	0.0054	34.437
CNAEC11BJ	C	C1	3	1	35.645	0.109	20	AGM	0.0054	35.310
CNAEC11CJ	C	C1	3	1	34.776	0.109	20	AGM	0.0055	34.460
CNAEC219J	C	C2	3	2	35.560	0.108	20	AGM	0.0054	34.881
CNAEC21AJ	C	C2	3	2	34.135	0.108	20	AGM	0.0054	33.359
CNAEC21BJ	C	C2	3	2	35.052	0.108	20	AGM	0.0054	34.309

Average	34.272	
Standard Dev.	1.213	
Coeff. of Var. [%]	3.539	
Min.	31.899	
Max.	36.480	
Number of Spec.	22	

$Average_{norm}$	0.0055	34.300
$Standard\ Dev._{norm}$		0.752
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.194
Min.	0.0053	32.628
Max.	0.0059	35.408
Number of Spec.		22


Laminate Open Hole Tension Properties (OHT2) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
Laminate Open Hole Tension Strength [ksi]

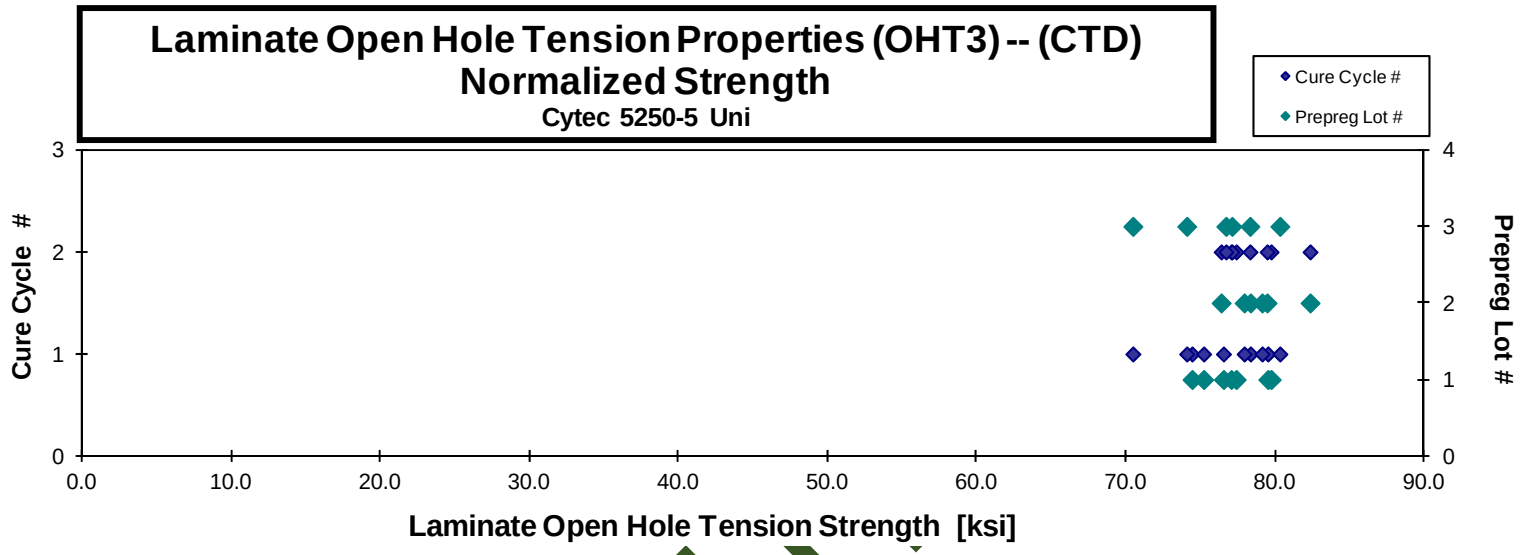
4.18 "50/40/10" Open-Hole Tension 3 Properties (OHT3)

Laminate Open Hole Tension Properties (OHT3) -- (CTD) Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAFA116B	A	C1	1	1	74.231	0.110	20	LGM	0.0055	74.434
CNAFA117B	A	C1	1	1	76.458	0.110	20	LGM	0.0055	76.539
CNAFA118B	A	C1	1	1	75.243	0.110	20	LGM	0.0055	75.209
CNAFA11DB	A	C1	1	1	79.181	0.110	20	LGM	0.0055	79.517
CNAFA215B	A	C2	1	2	79.807	0.110	20	LGM	0.0055	79.734
CNAFA216B	A	C2	1	2	77.404	0.110	20	LGM	0.0055	77.392
CNAFA217B	A	C2	1	2	77.030	0.110	20	LGM	0.0055	77.053
CNAFB115B	B	C1	2	1	78.404	0.110	20	LGM	0.0055	78.345
CNAFB116B	B	C1	2	1	79.019	0.110	20	LGM	0.0055	79.127
CNAFB117B	B	C1	2	1	78.824	0.109	20	LGM	0.0054	77.928
CNAFB215B	B	C2	2	2	83.088	0.109	20	LGM	0.0055	82.345
CNAFB216B	B	C2	2	2	77.156	0.109	20	LGM	0.0054	76.385
CNAFB217B	B	C2	2	2	80.812	0.108	20	LGM	0.0054	79.465
CNAFC115B	C	C1	3	1	81.107	0.109	20	LGM	0.0054	80.321
CNAFC116B	C	C1	3	1	74.721	0.109	20	LGM	0.0055	74.075
CNAFC117B	C	C1	3	1	70.959	0.109	20	LGM	0.0055	70.465
CNAFC215B	C	C2	3	2	77.659	0.109	20	LGM	0.0055	77.106
CNAFC216B	C	C2	3	2	77.630	0.109	20	LGM	0.0054	76.701
CNAFC217B	C	C2	3	2	79.530	0.108	20	LGM	0.0054	78.313

	Strength		$Strength_{norm}$
Average	77.803	$Average_{norm}$	77.392
Standard Dev.	2.772	$Standard\ Dev._{norm}$	2.660
Coeff. of Var. [%]	3.563	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.437
Min.	70.959	Min.	70.465
Max.	83.088	Max.	82.345
Number of Spec.	19	Number of Spec.	19


Laminate Open Hole Tension Properties (OHT3) -- (CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Laminate Open Hole Tension Strength [ksi]

Laminate Open Hole Tension Properties (OHT3) -- (RTD) Strength

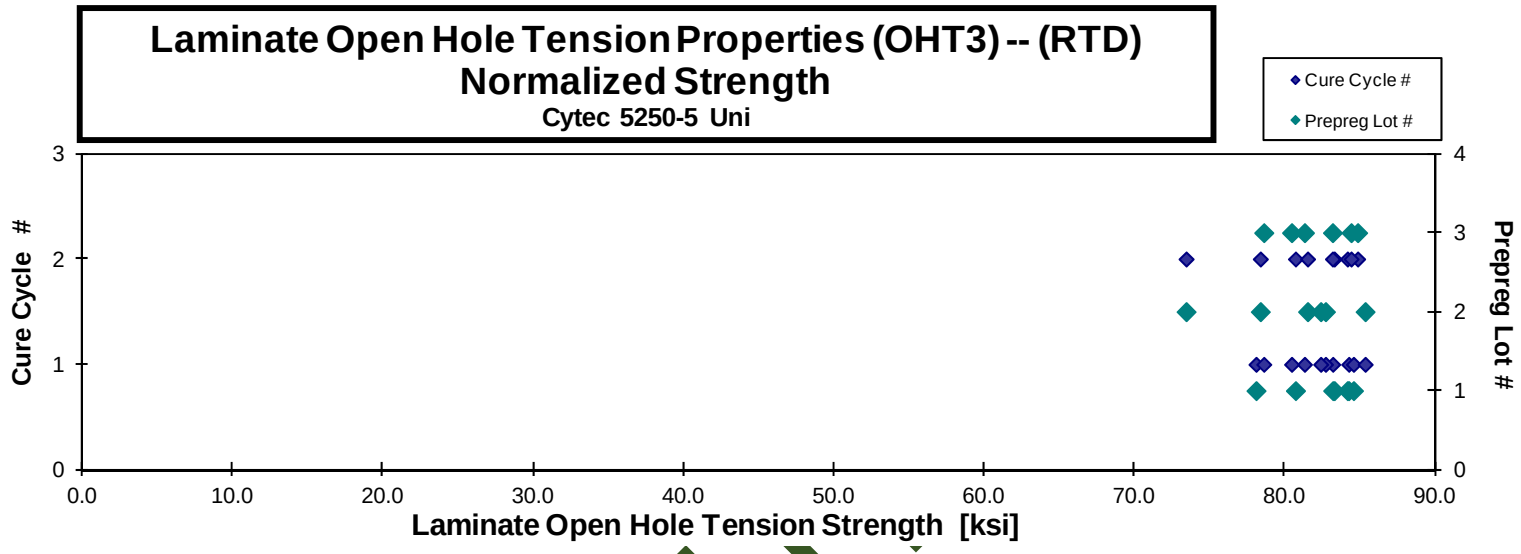
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAFA111A	A	C1	1	1	84.151	0.110	20	LGM	0.0055	84.253
CNAFA112A	A	C1	1	1	82.938	0.110	20	LGM	0.0055	83.189
CNAFA113A	A	C1	1	1	77.954	0.110	20	AGM	0.0055	78.084
CNAFA114A	A	C1	1	1	84.247	0.110	20	LGM	0.0055	84.566
CNAFA211A	A	C2	1	2	86.306	0.107	20	LGM / AGM	0.0054	84.162
CNAFA212A	A	C2	1	2	83.367	0.110	20	LGM / AGM	0.0055	83.291
CNAFA213A	A	C2	1	2	80.319	0.111	20	LGM	0.0055	80.708
CNAFB111A	B	C1	2	1	83.324	0.109	20	LGM / AGM	0.0055	82.705
CNAFB112A	B	C1	2	1	85.537	0.110	20	LGM / AGM	0.0055	85.343
CNAFB113A	B	C1	2	1	83.043	0.109	20	LGM / AGM	0.0055	82.389
CNAFB211A	B	C2	2	2	82.579	0.109	20	LGM / AGM	0.0054	81.516
CNAFB212A	B	C2	2	2	79.114	0.109	20	LGM / AGM	0.0054	78.371
CNAFB213A	B	C2	2	2	74.310	0.109	20	AGM	0.0054	73.432
CNAFC111A	C	C1	3	1	80.453	0.107	20	AGM	0.0054	78.600
CNAFC112A	C	C1	3	1	82.316	0.109	20	LGM / AGM	0.0054	81.306
CNAFC113A	C	C1	3	1	81.276	0.109	20	LGM / AGM	0.0054	80.451
CNAFC211A	C	C2	3	2	86.351	0.108	20	LGM / AGM	0.0054	84.847
CNAFC212A	C	C2	3	2	82.906	0.110	20	LGM / AGM	0.0055	83.169
CNAFC213A	C	C2	3	2	84.042	0.110	20	AGM	0.0055	84.411

Average	82.344	
Standard Dev.	2.963	
Coeff. of Var. [%]	3.598	
Min.	74.310	
Max.	86.351	
Number of Spec.	19	

$Average_{norm}$	0.0055	81.831
$Standard\ Dev._{norm}$		3.021
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.691
Min.	0.0054	73.432
Max.	0.0055	85.343
Number of Spec.		19


Laminate Open Hole Tension Properties (OHT3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Laminate Open Hole Tension Strength [ksi]

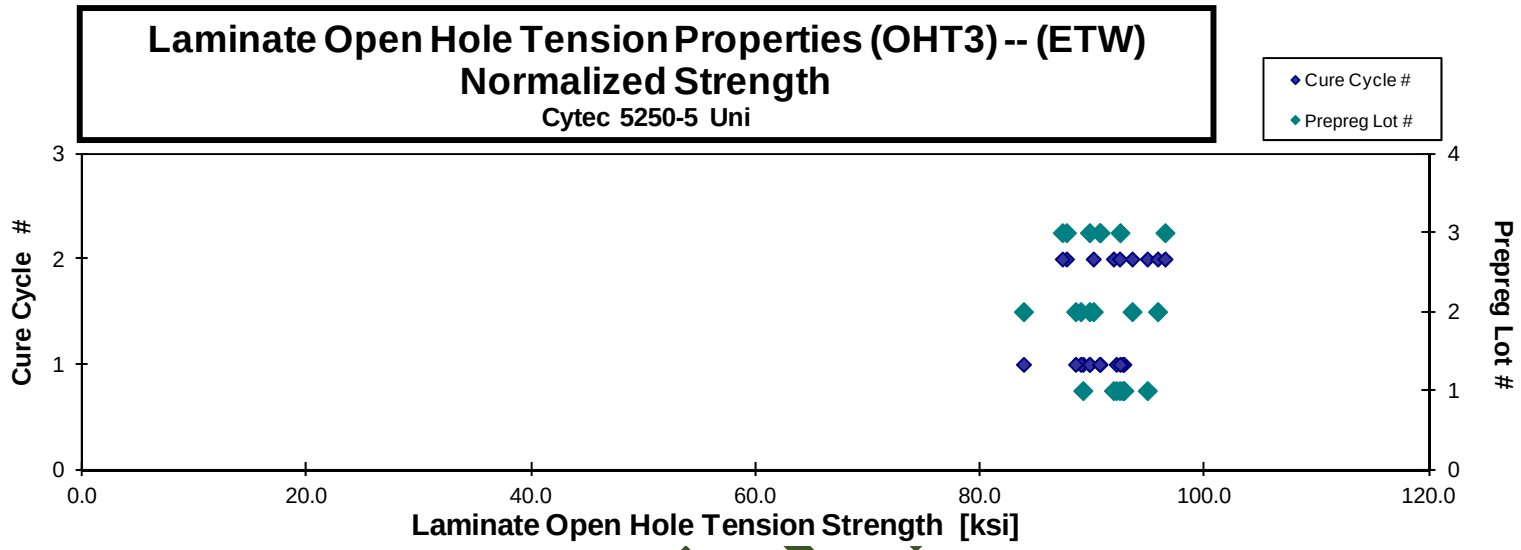
Laminate Open Hole Tension Properties (OHT3) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAFA119J	A	C1	1	1	91.794	0.110	20	MGM	0.0055	92.114
CNAFA11AJ	A	C1	1	1	92.527	0.110	20	MGM	0.0055	92.793
CNAFA11BJ	A	C1	1	1	90.607	0.108	20	MGM	0.0054	89.138
CNAFA11CJ	A	C1	1	1	95.312	0.107	20	LGM	0.0053	92.669
CNAFA21AJ	A	C2	1	2	91.627	0.110	20	MGM	0.0055	91.863
CNAFA21BJ	A	C2	1	2	92.606	0.110	20	MGM	0.0055	92.410
CNAFA21CJ	A	C2	1	2	95.111	0.110	20	MGM	0.0055	94.880
CNAFB119J	B	C1	2	1	90.965	0.109	20	MGM	0.0054	89.725
CNAFB11AJ	B	C1	2	1	85.034	0.108	20	MGM	0.0054	83.849
CNAFB11BJ	B	C1	2	1	89.690	0.109	20	MGM	0.0055	88.943
CNAFB11CJ	B	C1	2	1	88.827	0.110	20	MGM	0.0055	88.491
CNAFB219J	B	C2	2	2	97.316	0.108	20	MGM	0.0054	95.797
CNAFB21AJ	B	C2	2	2	91.424	0.108	20	MGM	0.0054	90.067
CNAFB21BJ	B	C2	2	2	94.967	0.108	20	MGM	0.0054	93.528
CNAFC119J	C	C1	3	1	91.979	0.108	20	MGM	0.0054	90.669
CNAFC11AJ	C	C1	3	1	90.785	0.109	20	MGM	0.0054	89.726
CNAFC11BJ	C	C1	3	1	91.627	0.109	20	MGM	0.0054	90.628
CNAFC11CJ	C	C1	3	1	93.211	0.109	20	MGM	0.0055	92.449
CNAFC219J	C	C2	3	2	96.486	0.110	20	MGM	0.0055	96.457
CNAFC21AJ	C	C2	3	2	88.187	0.109	20	MGM	0.0055	87.679
CNAFC21BJ	C	C2	3	2	88.247	0.109	20	MGM	0.0054	87.311

Average	91.825	
Standard Dev.	2.975	
Coeff. of Var. [%]	3.240	
Min.	85.034	
Max.	97.316	
Number of Spec.	21	

$Average_{norm}$	0.0055	91.009
$Standard\ Dev._{norm}$		3.004
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.300
Min.	0.0053	83.849
Max.	0.0055	96.457
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT3) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Open Hole Tension Strength [ksi]

4.19 “25/50/25” Filled-Hole Tension 1 Properties (FHT1)

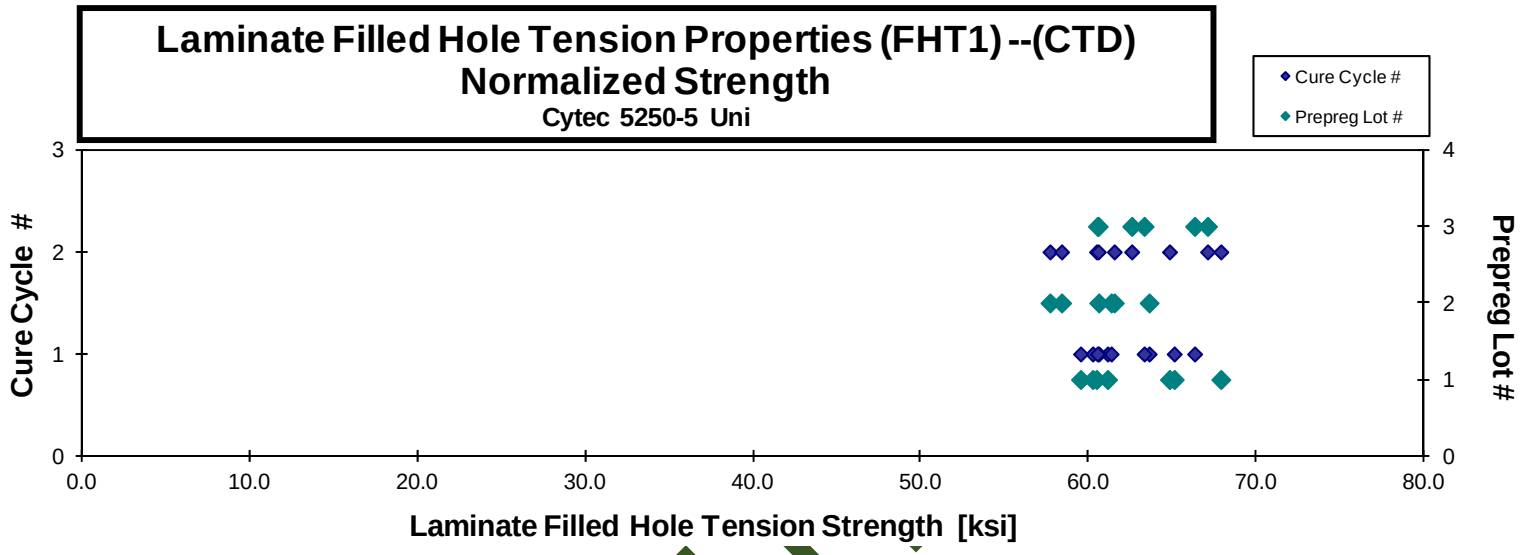
Laminate Filled Hole Tension Properties (FHT1) -- (CTD) Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA4A116B	A	C1	1	1	60.161	0.088	16	MGM	0.0055	60.240
CNA4A117B	A	C1	1	1	59.766	0.088	16	MGM	0.0055	59.517
CNA4A118B	A	C1	1	1	61.508	0.087	16	MGM	0.0055	61.123
CNA4A119B	A	C1	1	1	64.116	0.089	16	MGM	0.0056	65.099
CNA4A216B	A	C2	1	2	64.055	0.089	16	MGM	0.0056	64.819
CNA4A217B	A	C2	1	2	66.815	0.089	16	MGM	0.0056	67.878
CNA4A218B	A	C2	1	2	61.588	0.086	16	MGM	0.0054	60.468
CNA4B115B	B	C1	2	1	61.411	0.088	16	LGM	0.0055	61.341
CNA4B116B	B	C1	2	1	63.934	0.088	16	LGM	0.0055	63.607
CNA4B118B	B	C1	2	1	61.026	0.087	16	LGM	0.0055	60.598
CNA4B215B	B	C2	2	2	59.427	0.085	16	LGM	0.0053	57.694
CNA4B216B	B	C2	2	2	60.138	0.085	16	LGM	0.0053	58.384
CNA4B217B	B	C2	2	2	64.001	0.085	16	LGM	0.0053	61.528
CNA4C115B	C	C1	3	1	61.041	0.087	16	MGM	0.0055	60.521
CNA4C116B	C	C1	3	1	63.874	0.087	16	MGM	0.0055	63.305
CNA4C117B	C	C1	3	1	65.644	0.089	16	MGM	0.0056	66.316
CNA4C215B	C	C2	3	2	63.382	0.087	16	MGM	0.0054	62.566
CNA4C216B	C	C2	3	2	61.551	0.087	16	MGM	0.0054	60.572
CNA4C217B	C	C2	3	2	68.303	0.086	16	MGM	0.0054	67.087

Average	62.723	
Standard Dev.	2.465	
Coeff. of Var. [%]	3.931	
Min.	59.427	
Max.	68.303	
Number of Spec.	19	

$Average_{norm}$	0.0055	62.246
$Standard\ Dev._{norm}$		2.895
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.652
Min.	0.0053	57.694
Max.	0.0056	67.878
Number of Spec.		19


Laminate Filled Hole Tension Properties (FHT1) --(CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
Laminate Filled Hole Tension Strength [ksi]

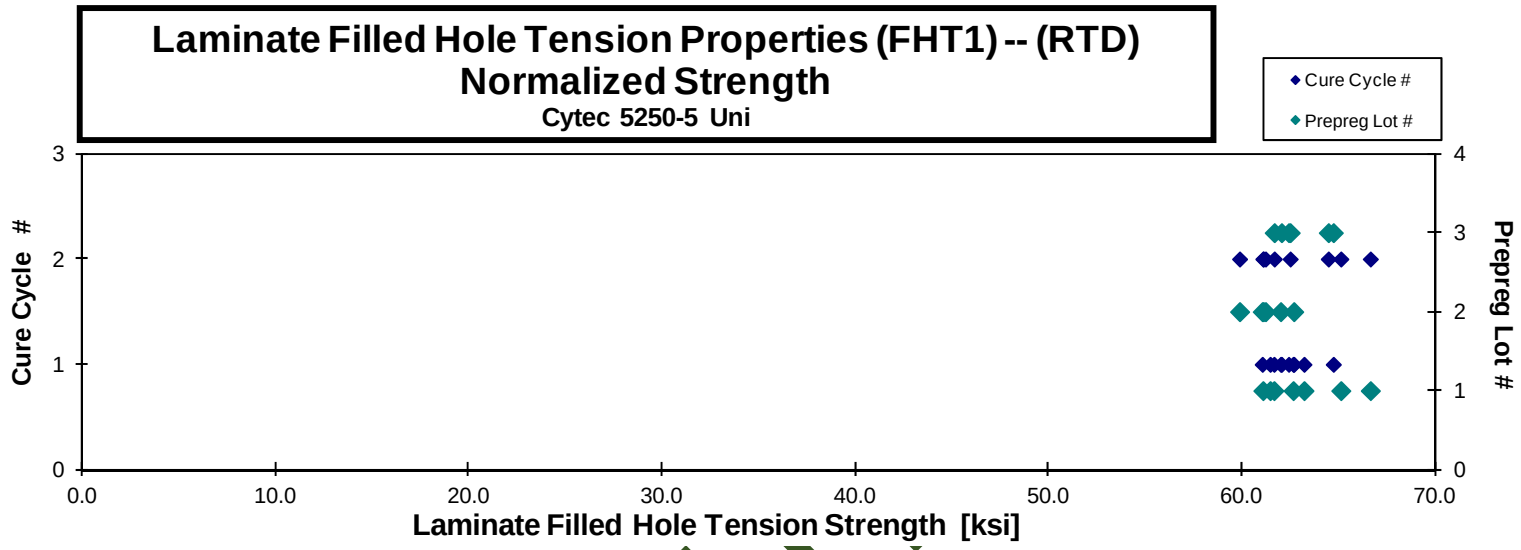
Laminate Filled Hole Tension Properties (FHT1) -- (RTD) Strength

Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA4A111A	A	C1	1	1	61.802	0.088	16	MGM	0.0055	61.662
CNA4A112A	A	C1	1	1	63.154	0.088	16	MGM	0.0055	63.213
CNA4A113A	A	C1	1	1	61.248	0.088	16	MGM	0.0055	61.457
CNA4A114A	A	C1	1	1	62.806	0.088	16	MGM	0.0055	62.651
CNA4A213A	A	C2	1	2	66.978	0.088	16	MGM	0.0055	66.648
CNA4A214A	A	C2	1	2	60.732	0.089	16	MGM	0.0055	61.088
CNA4A215A	A	C2	1	2	64.606	0.089	16	MGM	0.0055	65.120
CNA4B112A	B	C1	2	1	62.946	0.088	16	MGM	0.0055	62.684
CNA4B113A	B	C1	2	1	61.483	0.087	16	MGM	0.0055	61.052
CNA4B114A	B	C1	2	1	62.524	0.087	16	MGM	0.0055	62.003
CNA4B211A	B	C2	2	2	62.896	0.084	16	MGM	0.0052	59.882
CNA4B212A	B	C2	2	2	63.495	0.085	16	MGM	0.0053	61.223
CNA4B214A	B	C2	2	2	63.534	0.085	16	MGM	0.0053	61.116
CNA4C111A	C	C1	3	1	65.855	0.087	16	MGM	0.0054	64.732
CNA4C112A	C	C1	3	1	62.151	0.088	16	MGM	0.0055	62.045
CNA4C113A	C	C1	3	1	62.678	0.088	16	MGM	0.0055	62.417
CNA4C211A	C	C2	3	2	65.705	0.086	16	MGM	0.0054	64.473
CNA4C212A	C	C2	3	2	62.821	0.088	16	MGM	0.0055	62.500
CNA4C213A	C	C2	3	2	62.088	0.087	16	MGM	0.0055	61.676

	Strength		$Strength_{norm}$
Average	63.132	$Average_{norm}$	62.508
Standard Dev.	1.633	$Standard\ Dev._{norm}$	1.682
Coeff. of Var. [%]	2.587	$Coeff.\ of\ Var.\ [\%]_{norm}$	2.691
Min.	60.732	Min.	59.882
Max.	66.978	Max.	66.648
Number of Spec.	19	Number of Spec.	19

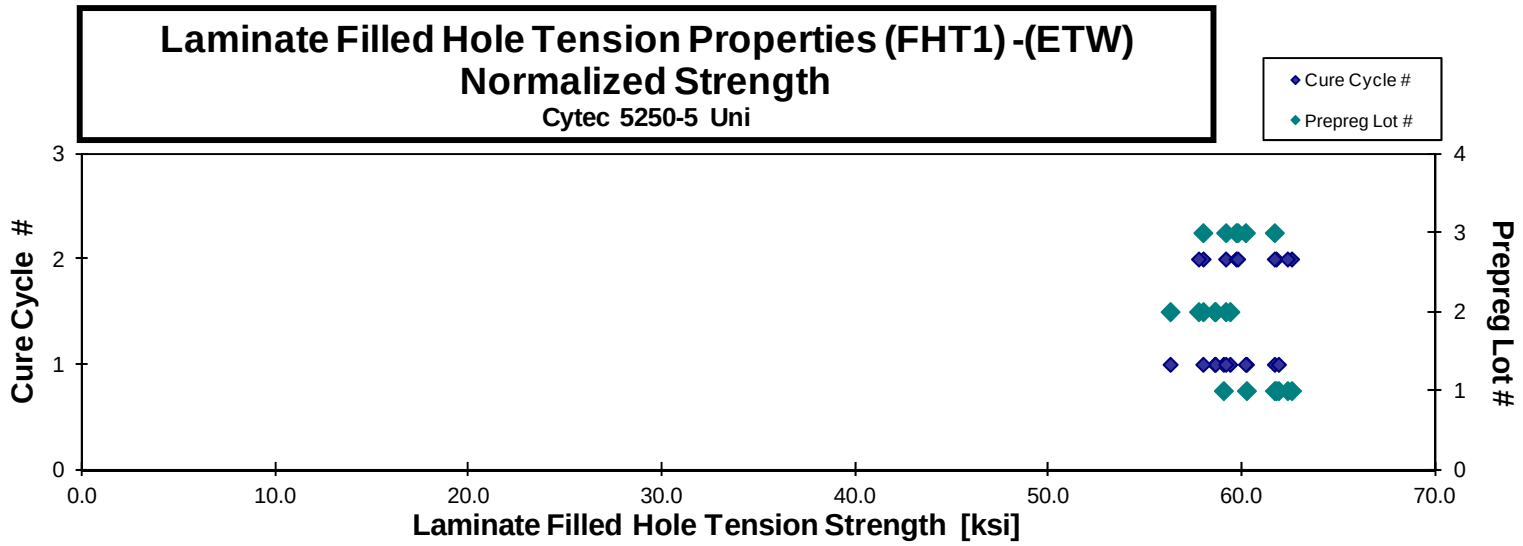

Laminate Filled Hole Tension Properties (FHT1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Filled Hole Tension Strength [ksi]
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
0
1
2
3
4

Laminate Filled Hole Tension Properties (FHT1) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA4A11AJ	A	C1	1	1	58.075	0.089	16	MGM	0.0056	59.043
CNA4A11BJ	A	C1	1	1	60.876	0.089	16	MGM	0.0056	61.684
CNA4A11CJ	A	C1	1	1	60.380	0.090	16	MGM	0.0056	61.890
CNA4A11DJ	A	C1	1	1	59.414	0.089	16	MGM	0.0056	60.236
CNA4A21CJ	A	C2	1	2	62.773	0.088	16	AGM / LGM	0.0055	62.571
CNA4A21DJ	A	C2	1	2	61.851	0.088	16	AGM / LGM	0.0055	61.769
CNA4A21EJ	A	C2	1	2	62.179	0.088	16	AGM / LGM	0.0055	62.356
CNA4B119J	B	C1	2	1	56.682	0.087	16	AGM / LGM	0.0055	56.284
CNA4B11AJ	B	C1	2	1	58.524	0.088	16	AGM / LGM	0.0055	58.590
CNA4B11BJ	B	C1	2	1	58.773	0.088	16	AGM / LGM	0.0055	58.617
CNA4B11CJ	B	C1	2	1	58.701	0.089	16	AGM / LGM	0.0056	59.379
CNA4B21AJ	B	C2	2	2	58.906	0.087	16	AGM / LGM	0.0054	57.992
CNA4B21BJ	B	C2	2	2	60.033	0.087	16	AGM / LGM	0.0054	59.158
CNA4B21CJ	B	C2	2	2	58.497	0.087	16	AGM / LGM	0.0054	57.755
CNA4C119J	C	C1	3	1	60.367	0.088	16	MGM	0.0055	60.184
CNA4C11AJ	C	C1	3	1	59.682	0.087	16	MGM	0.0055	59.162
CNA4C11BJ	C	C1	3	1	58.558	0.087	16	MGM	0.0054	57.982
CNA4C219J	C	C2	3	2	61.726	0.088	16	MGM	0.0055	61.680
CNA4C21AJ	C	C2	3	2	59.936	0.088	16	MGM	0.0055	59.697
CNA4C21BJ	C	C2	3	2	59.994	0.088	16	MGM	0.0055	59.778

	Strength		$Strength_{norm}$
Average	59.796	$Average_{norm}$	59.790
Standard Dev.	1.541	$Standard\ Dev._{norm}$	1.739
Coeff. of Var. [%]	2.578	$Coeff.\ of\ Var.\ [\%]_{norm}$	2.908
Min.	56.682	Min.	56.284
Max.	62.773	Max.	62.571
Number of Spec.	20	Number of Spec.	20



4.20 "10/80/10" Filled-Hole Tension 2 Properties (FHT2)

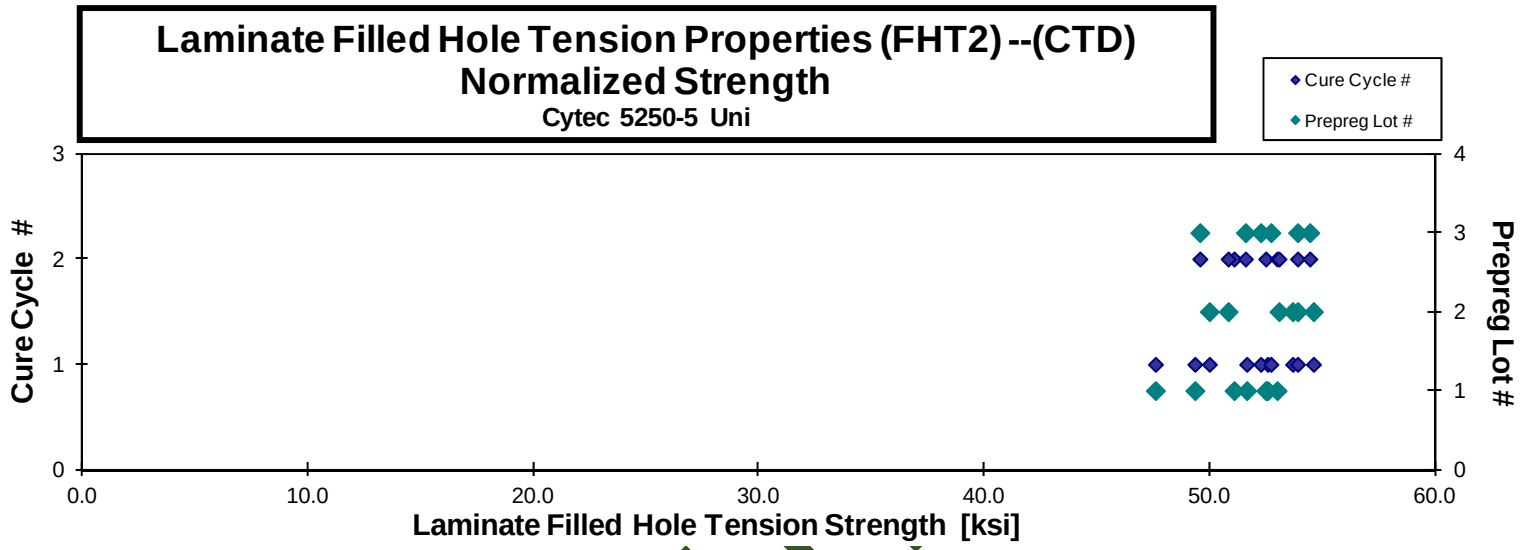
Laminate Filled Hole Tension Properties (FHT2) -- (CTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA5A115B	A	C1	1	1	49.628	0.109	20	MGM	0.0055	49.342
CNA5A116B	A	C1	1	1	47.716	0.110	20	MGM	0.0055	47.593
CNA5A117B	A	C1	1	1	53.147	0.109	20	MGM	0.0054	52.567
CNA5A118B	A	C1	1	1	53.812	0.106	20	MGM	0.0053	51.643
CNA5A215B	A	C2	1	2	50.837	0.111	20	MGM	0.0055	51.083
CNA5A216B	A	C2	1	2	51.921	0.111	20	MGM	0.0056	52.487
CNA5A217B	A	C2	1	2	52.583	0.111	20	MGM	0.0055	52.989
CNA5B115B	B	C1	2	1	53.494	0.110	20	MGM	0.0055	53.681
CNA5B116B	B	C1	2	1	54.349	0.111	20	MGM	0.0055	54.604
CNA5B117B	B	C1	2	1	50.779	0.108	20	MGM	0.0054	49.986
CNA5B215B	B	C2	2	2	54.544	0.109	20	MGM	0.0054	53.899
CNA5B216B	B	C2	2	2	51.356	0.109	20	MGM	0.0054	50.819
CNA5B217B	B	C2	2	2	55.532	0.105	20	MGM	0.0053	53.075
CNA5C115B	C	C1	3	1	52.881	0.109	20	MGM	0.0054	52.264
CNA5C116B	C	C1	3	1	52.765	0.110	20	MGM	0.0055	52.717
CNA5C117B	C	C1	3	1	54.071	0.110	20	MGM	0.0055	53.899
CNA5C215B	C	C2	3	2	55.631	0.108	20	MGM	0.0054	54.442
CNA5C216B	C	C2	3	2	52.933	0.108	20	MGM	0.0054	51.586
CNA5C217B	C	C2	3	2	51.991	0.105	20	MGM	0.0052	49.565

Average	**52.609**	
Standard Dev.	**1.985**	
Coeff. of Var. [%]	**3.774**	
Min.	**47.716**	
Max.	**55.631**	
Number of Spec.	**19**	

$Average_{norm}$	**0.0054**	**52.013**
Standard $Dev._{norm}$		**1.901**
Coeff. of Var. $[\%]_{norm}$		**3.655**
Min.	**0.0052**	**47.593**
Max.	**0.0056**	**54.604**
Number of Spec.		**19**


Laminate Filled Hole Tension Properties (FHT2) --(CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
Laminate Filled Hole Tension Strength [ksi]

Laminate Filled Hole Tension Properties (FHT2) -- (RTD) Strength

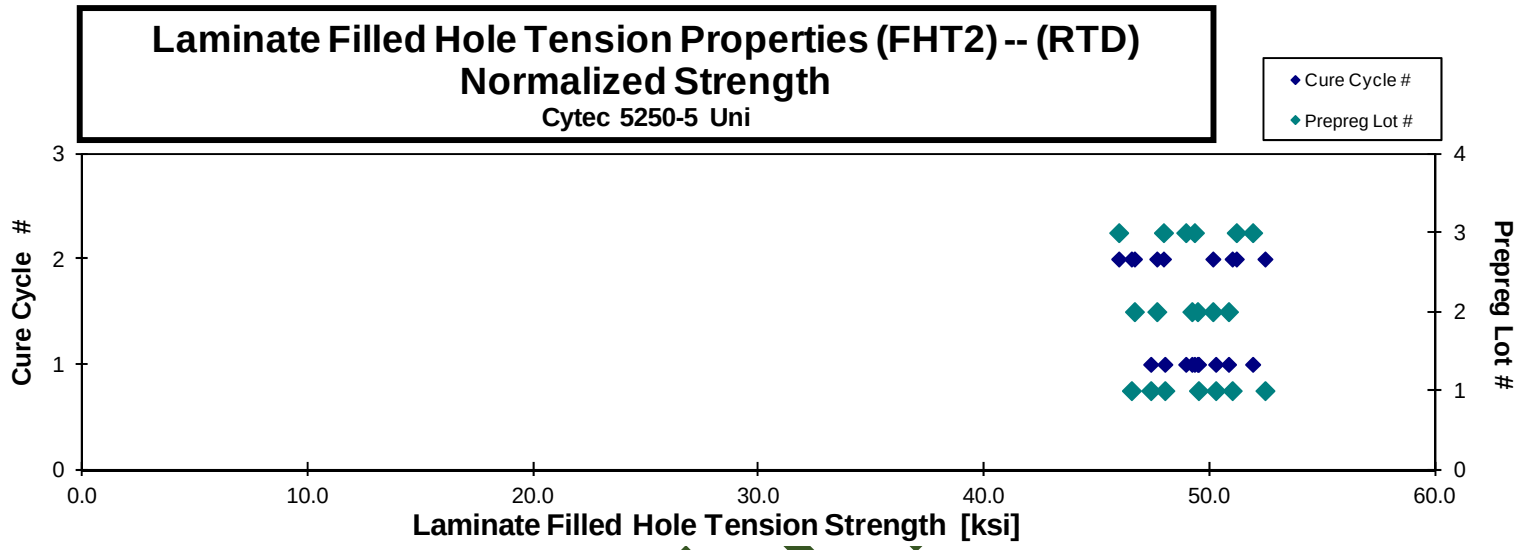
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA5A111A	A	C1	1	1	50.267	0.110	20	MGM	0.0055	50.267
CNA5A112A	A	C1	1	1	49.639	0.110	20	MGM	0.0055	49.504
CNA5A113A	A	C1	1	1	48.391	0.109	20	MGM	0.0055	48.010
CNA5A114A	A	C1	1	1	47.740	0.109	20	MGM	0.0055	47.386
CNA5A211A	A	C2	1	2	50.073	0.112	20	MGM	0.0056	50.999
CNA5A212A	A	C2	1	2	51.439	0.112	20	MGM	0.0056	52.452
CNA5A213A	A	C2	1	2	45.964	0.111	20	MGM	0.0056	46.528
CNA5B112A	B	C1	2	1	49.306	0.110	20	MGM	0.0055	49.209
CNA5B113A	B	C1	2	1	49.482	0.110	20	MGM	0.0055	49.460
CNA5B114A	B	C1	2	1	50.690	0.110	20	MGM	0.0055	50.836
CNA5B212A	B	C2	2	2	47.505	0.108	20	MGM	0.0054	46.663
CNA5B213A	B	C2	2	2	50.897	0.108	20	MGM	0.0054	50.141
CNA5B214A	B	C2	2	2	47.439	0.111	20	MGM	0.0055	47.655
CNA5C112A	C	C1	3	1	49.908	0.109	20	MGM	0.0054	49.325
CNA5C113A	C	C1	3	1	52.811	0.108	20	MGM	0.0054	51.906
CNA5C114A	C	C1	3	1	49.693	0.108	20	MGM	0.0054	48.940
CNA5C211A	C	C2	3	2	47.796	0.106	20	MGM	0.0053	45.964
CNA5C212A	C	C2	3	2	52.232	0.108	20	MGM	0.0054	51.180
CNA5C214A	C	C2	3	2	48.883	0.108	20	MGM	0.0054	47.950

Average	49.482	
Standard Dev.	1.749	
Coeff. of Var. [%]	3.535	
Min.	45.964	
Max.	52.811	
Number of Spec.	19	

$Average_{norm}$	0.0055	49.178
$Standard\ Dev._{norm}$		1.866
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.795
Min.	0.0053	45.964
Max.	0.0056	52.452
Number of Spec.		19


Laminate Filled Hole Tension Properties (FHT2) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
Laminate Filled Hole Tension Strength [ksi]

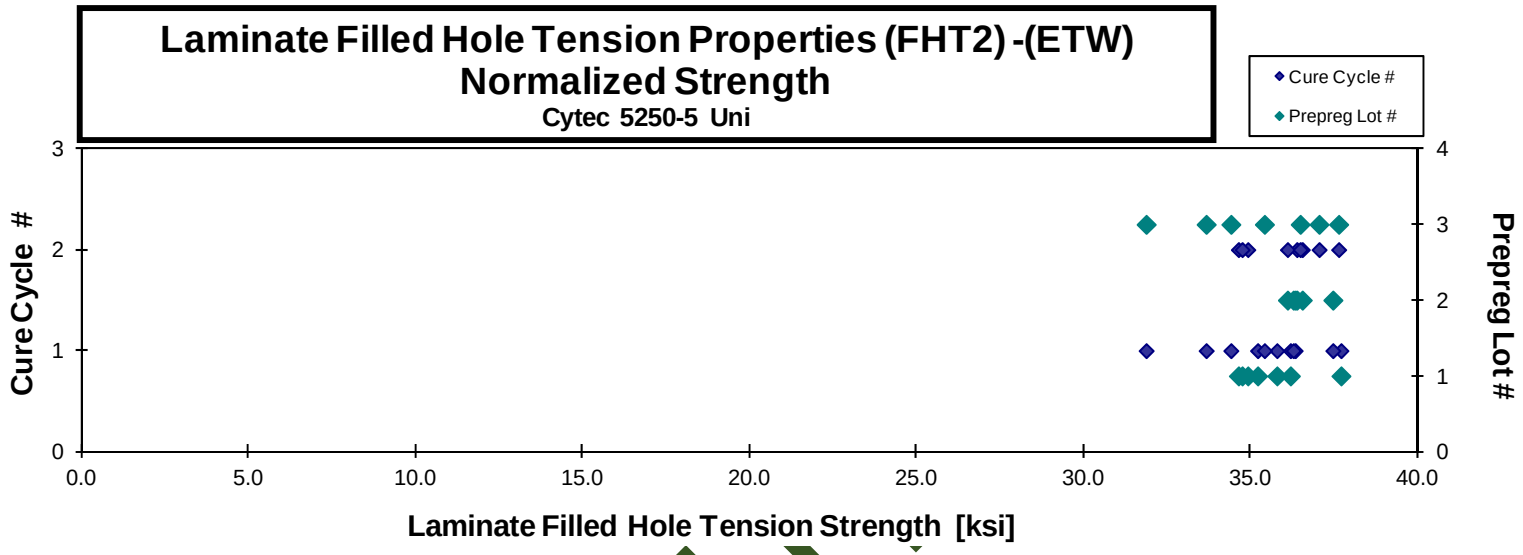
Laminate Filled Hole Tension Properties (FHT2) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA5A119J	A	C1	1	1	37.447	0.111	20	AGM	0.0055	37.703
CNA5A11AJ	A	C1	1	1	36.035	0.110	20	AGM	0.0055	36.188
CNA5A11BJ	A	C1	1	1	35.139	0.110	20	AGM	0.0055	35.208
CNA5A11EJ	A	C1	1	1	35.688	0.110	20	AGM	0.0055	35.785
CNA5A219J	A	C2	1	2	34.677	0.111	20	AGM	0.0055	34.913
CNA5A21AJ	A	C2	1	2	34.183	0.111	20	AGM	0.0056	34.633
CNA5A21BJ	A	C2	1	2	34.483	0.111	20	AGM	0.0055	34.744
CNA5B119J	B	C1	2	1	36.234	0.110	20	AGM	0.0055	36.333
CNA5B11AJ	B	C1	2	1	37.298	0.110	20	AGM	0.0055	37.461
CNA5B11BJ	B	C1	2	1	36.112	0.111	20	AGM	0.0055	36.276
CNA5B21AJ	B	C2	2	2	37.310	0.107	20	AGM	0.0054	36.383
CNA5B21BJ	B	C2	2	2	37.528	0.107	20	AGM	0.0054	36.544
CNA5B21CJ	B	C2	2	2	37.033	0.107	20	AGM	0.0054	36.101
CNA5C119J	C	C1	3	1	34.574	0.109	20	AGM	0.0055	34.407
CNA5C11AJ	C	C1	3	1	35.818	0.109	20	AGM	0.0054	35.411
CNA5C11BJ	C	C1	3	1	34.169	0.108	20	AGM	0.0054	33.667
CNA5C11CJ	C	C1	3	1	32.395	0.108	20	AGM	0.0054	31.870
CNA5C219J	C	C2	3	2	38.178	0.108	20	AGM	0.0054	37.634
CNA5C21AJ	C	C2	3	2	37.142	0.108	20	AGM	0.0054	36.483
CNA5C21CJ	C	C2	3	2	37.893	0.108	20	AGM	0.0054	37.049

Average	35.967	
Standard Dev.	1.542	
Coeff. of Var. [%]	4.287	
Min.	32.395	
Max.	38.178	
Number of Spec.	20	

$Average_{norm}$	0.0055	35.740
$Standard\ Dev._{norm}$		1.434
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.011
Min.	0.0054	31.870
Max.	0.0056	37.703
Number of Spec.		20


Laminate Filled Hole Tension Properties (FHT2) -(ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
Laminate Filled Hole Tension Strength [ksi]

4.21 "50/40/10" Filled-Hole Tension 3 Properties (FHT3)

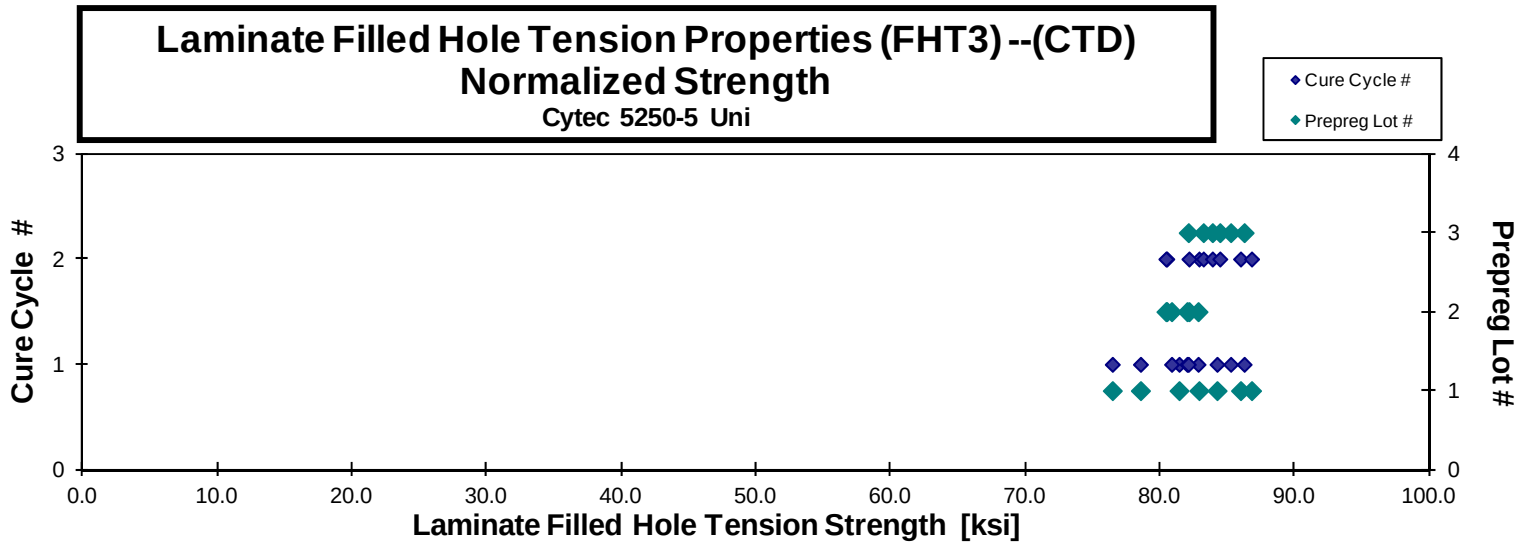
Laminate Filled Hole Tension Properties (FHT3) -- (CTD) Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA6A116B	A	C1	1	1	81.325	0.110	20	MGM	0.0055	81.423
CNA6A117B	A	C1	1	1	77.159	0.109	20	MGM	0.0055	76.469
CNA6A118B	A	C1	1	1	86.246	0.107	20	MGM	0.0054	84.247
CNA6A119B	A	C1	1	1	78.121	0.111	20	MGM	0.0055	78.559
CNA6A215B	A	C2	1	2	83.578	0.109	20	MGM	0.0055	82.907
CNA6A216B	A	C2	1	2	86.360	0.110	20	MGM	0.0055	85.994
CNA6A217B	A	C2	1	2	87.421	0.109	20	MGM	0.0055	86.811
CNA6B115B	B	C1	2	1	83.114	0.110	20	MGM	0.0055	82.836
CNA6B116B	B	C1	2	1	82.322	0.110	20	MGM	0.0055	82.023
CNA6B117B	B	C1	2	1	82.676	0.108	20	MGM	0.0054	80.873
CNA6B215B	B	C2	2	2	83.579	0.108	20	MGM	0.0054	82.161
CNA6B216B	B	C2	2	2	81.739	0.108	20	MGM	0.0054	80.513
CNA6B217B	B	C2	2	2	83.761	0.106	20	MGM	0.0053	80.449
CNA6C115B	C	C1	3	1	86.717	0.109	20	MGM	0.0055	86.258
CNA6C116B	C	C1	3	1	83.018	0.109	20	MGM	0.0054	82.112
CNA6C117B	C	C1	3	1	85.195	0.110	20	MGM	0.0055	85.259
CNA6C215B	C	C2	3	2	84.599	0.108	20	MGM	0.0054	83.227
CNA6C216B	C	C2	3	2	85.049	0.109	20	MGM	0.0054	83.902
CNA6C217B	C	C2	3	2	85.793	0.108	20	MGM	0.0054	84.454

Average	83.567	
Standard Dev.	2.714	
Coeff. of Var. [%]	3.248	
Min.	77.159	
Max.	87.421	
Number of Spec.	19	

$Average_{norm}$	0.0054	82.657
$Standard\ Dev._{norm}$		2.646
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.202
Min.	0.0053	76.469
Max.	0.0055	86.811
Number of Spec.		19


Laminate Filled Hole Tension Properties (FHT3) --(CTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Filled Hole Tension Strength [ksi]

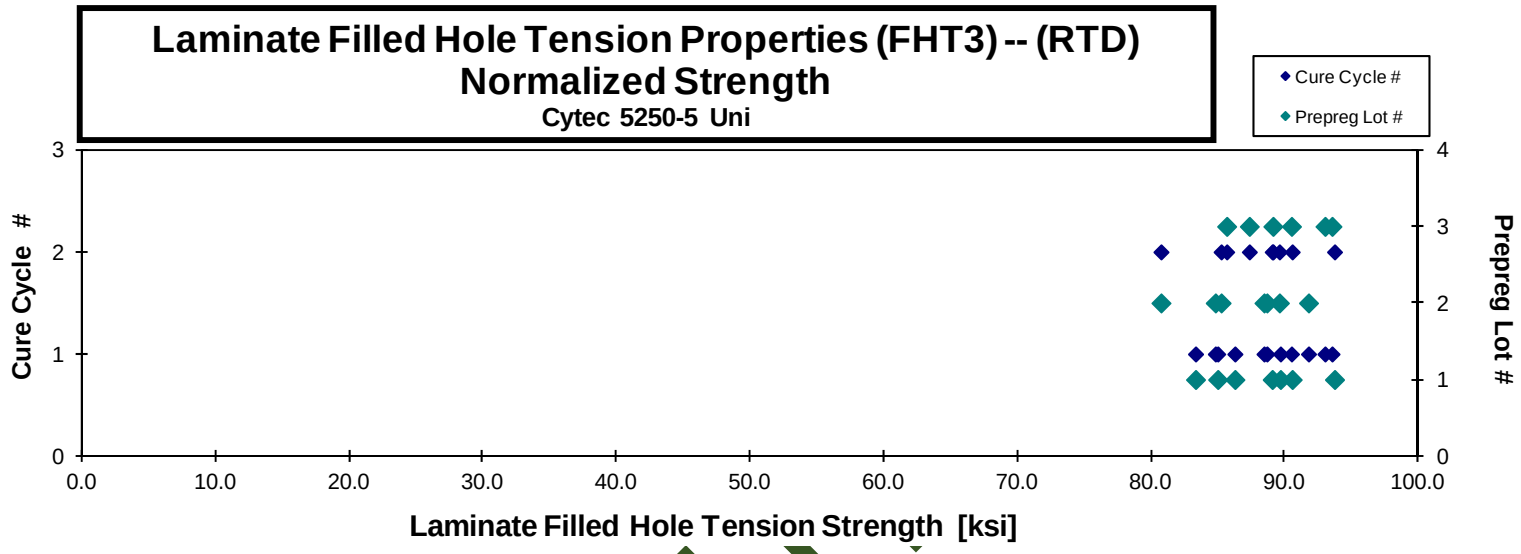
Laminate Filled Hole Tension Properties (FHT3) -- (RTD) Strength

Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	Strength$_{norm}$ [ksi]
CNA6A111A	A	C1	1	1	84.187	0.111	20	MGM	0.0056	84.991
CNA6A113A	A	C1	1	1	82.914	0.111	20	MGM	0.0055	83.329
CNA6A114A	A	C1	1	1	89.345	0.110	20	MGM	0.0055	89.683
CNA6A115A	A	C1	1	1	86.174	0.110	20	MGM	0.0055	86.278
CNA6A211A	A	C2	1	2	90.319	0.110	20	MGM	0.0055	90.566
CNA6A212A	A	C2	1	2	93.860	0.110	20	MGM	0.0055	93.732
CNA6A213A	A	C2	1	2	89.450	0.110	20	MGM	0.0055	89.071
CNA6B111A	B	C1	2	1	86.797	0.107	20	MGM	0.0054	84.811
CNA6B112A	B	C1	2	1	92.869	0.109	20	MGM	0.0054	91.786
CNA6B113A	B	C1	2	1	89.306	0.109	20	MGM	0.0054	88.453
CNA6B114A	B	C1	2	1	89.362	0.109	20	MGM	0.0055	88.672
CNA6B211A	B	C2	2	2	84.123	0.106	20	MGM	0.0053	80.745
CNA6B212A	B	C2	2	2	87.415	0.107	20	MGM	0.0054	85.243
CNA6B213A	B	C2	2	2	91.536	0.108	20	MGM	0.0054	89.608
CNA6C111A	C	C1	3	1	90.358	0.110	20	MGM	0.0055	90.508
CNA6C112A	C	C1	3	1	92.951	0.112	20	MGM	0.0056	93.543
CNA6C113A	C	C1	3	1	91.750	0.112	20	MGM	0.0056	93.015
CNA6C212A	C	C2	3	2	86.779	0.109	20	MGM	0.0054	85.661
CNA6C213A	C	C2	3	2	89.953	0.109	20	MGM	0.0054	89.122
CNA6C214A	C	C2	3	2	88.593	0.108	20	MGM	0.0054	87.358

	Strength	Avg. t_{ply} [in]	Strength$_{norm}$ [ksi]
Average	88.857	Average$_{norm}$	0.0055	88.309
Standard Dev.	3.000	Standard Dev.$_{norm}$		3.499
Coeff. of Var. [%]	3.376	Coeff. of Var. [%]$_{norm}$		3.962
Min.	82.914	Min.	0.0053	80.745
Max.	93.860	Max.	0.0056	93.732
Number of Spec.	20	Number of Spec.		20


Laminate Filled Hole Tension Properties (FHT3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Filled Hole Tension Strength [ksi]

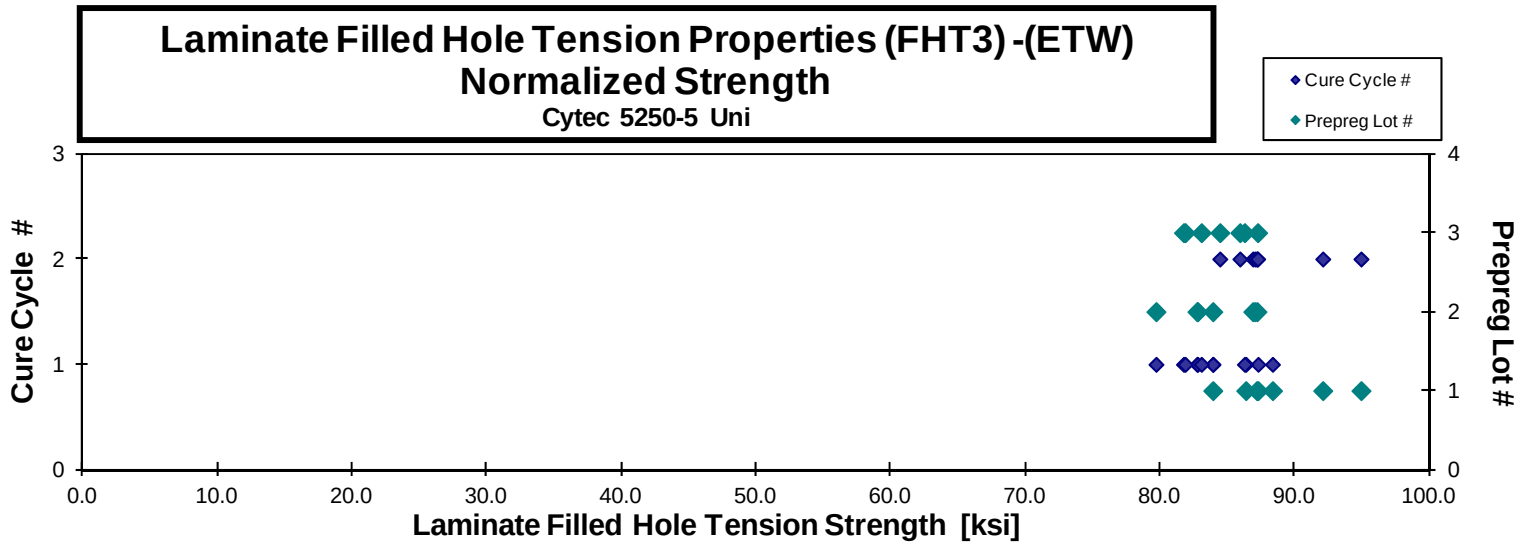
Laminate Filled Hole Tension Properties (FHT3) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA6A11BJ	A	C1	1	1	86.830	0.111	20	LGM	0.0055	87.291
CNA6A11CJ	A	C1	1	1	85.964	0.111	20	LGM	0.0055	86.381
CNA6A11DJ	A	C1	1	1	88.282	0.110	20	LGM	0.0055	88.362
CNA6A11EJ	A	C1	1	1	83.983	0.110	20	LGM	0.0055	83.932
CNA6A21AJ	A	C2	1	2	95.095	0.110	20	LGM	0.0055	94.937
CNA6A21BJ	A	C2	1	2	92.380	0.110	20	LGM	0.0055	92.100
CNA6A21CJ	A	C2	1	2	88.097	0.109	20	LGM	0.0054	87.189
CNA6B119J	B	C1	2	1	82.804	0.110	20	LGM	0.0055	82.754
CNA6B11AJ	B	C1	2	1	82.988	0.110	20	LGM	0.0055	82.799
CNA6B11BJ	B	C1	2	1	83.683	0.110	20	LGM	0.0055	83.937
CNA6B11CJ	B	C1	2	1	79.543	0.110	20	LGM	0.0055	79.712
CNA6B219J	B	C2	2	2	88.038	0.109	20	LGM	0.0054	86.905
CNA6B21AJ	B	C2	2	2	89.214	0.108	20	LGM	0.0054	87.213
CNA6B21BJ	B	C2	2	2	88.752	0.108	20	LGM	0.0054	87.057
CNA6C119J	C	C1	3	1	84.867	0.112	20	MGM	0.0056	86.282
CNA6C11AJ	C	C1	3	1	82.110	0.111	20	MGM	0.0056	83.080
CNA6C11BJ	C	C1	3	1	81.992	0.110	20	MGM	0.0055	81.756
CNA6C11CJ	C	C1	3	1	82.657	0.109	20	MGM	0.0054	81.880
CNA6C21AJ	C	C2	3	2	84.903	0.109	20	MGM	0.0055	84.453
CNA6C21BJ	C	C2	3	2	86.986	0.109	20	MGM	0.0054	85.945
CNA6C21CJ	C	C2	3	2	86.228	0.111	20	MGM	0.0056	87.260

Average	85.971
Standard Dev.	3.688
Coeff. of Var. [%]	4.290
Min.	79.543
Max.	95.095
Number of Spec.	21

$Average_{norm}$	0.0055	85.773
$Standard\ Dev._{norm}$		3.497
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.077
Min.	0.0054	79.712
Max.	0.0056	94.937
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT3) -(ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Filled Hole Tension Strength [ksi]

4.22 "25/50/25" Open-Hole Compression 1 Properties (OHC1)

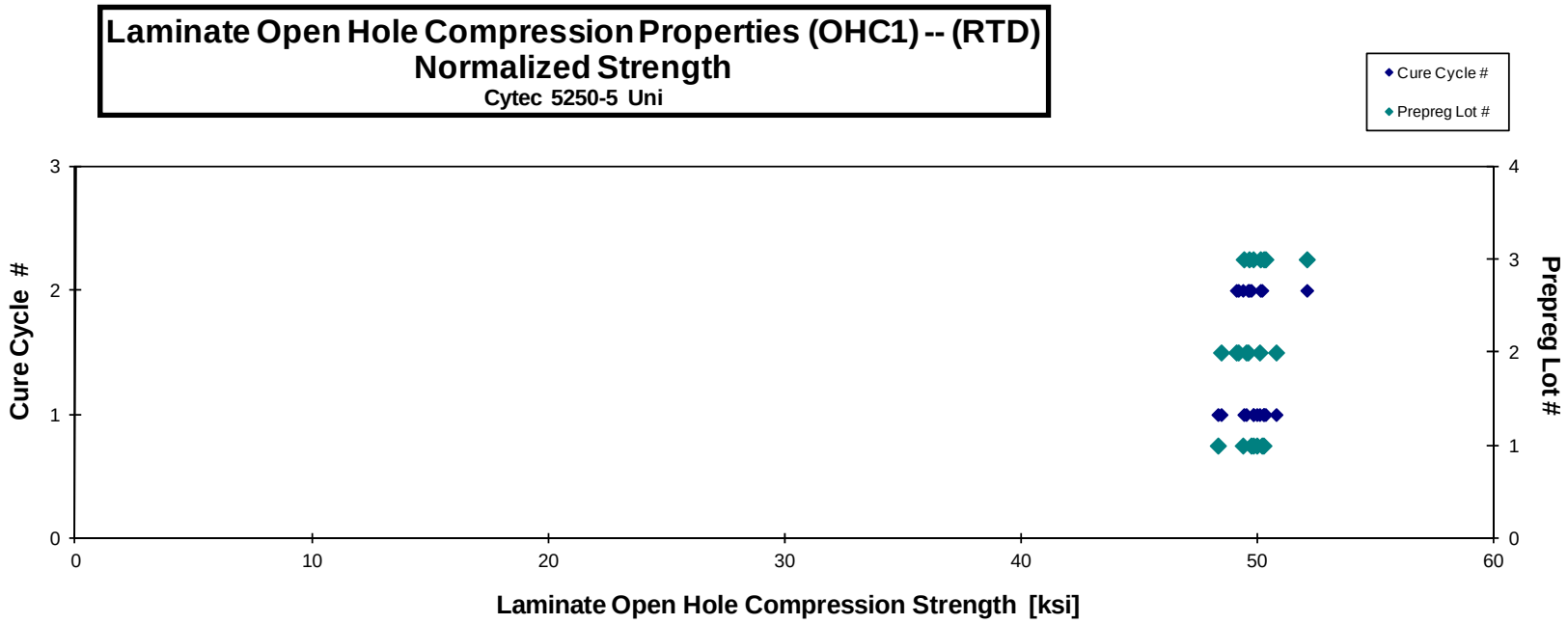
Laminate Open Hole Compression Properties (OHC1) -- (RTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAGA111A	A	C1	1	1	49.638	0.171	32	LGM	0.0054	48.350
CNAGA112A	A	C1	1	1	50.004	0.177	32	LGM	0.0055	50.279
CNAGA113A	A	C1	1	1	49.607	0.177	32	LGM	0.0055	49.852
CNAGA114A	A	C1	1	1	49.634	0.177	32	LGM	0.0055	49.996
CNAGA211A	A	C2	1	2	49.750	0.175	32	LGM	0.0055	49.406
CNAGA212A	A	C2	1	2	50.141	0.175	32	LGM	0.0055	49.756
CNAGA213A	A	C2	1	2	49.970	0.177	32	LGM	0.0055	50.216
CNAGB111A	B	C1	2	1	51.150	0.175	32	LGM	0.0055	50.815
CNAGB112A	B	C1	2	1	48.305	0.177	32	LGM	0.0055	48.488
CNAGB113A	B	C1	2	1	50.417	0.175	32	LGM	0.0055	50.117
CNAGB114A	B	C1	2	1	49.947	0.175	32	LGM	0.0055	49.545
CNAGB211A	B	C2	2	2	50.215	0.172	32	LGM	0.0054	49.131
CNAGB212A	B	C2	2	2	50.379	0.172	32	LGM	0.0054	49.215
CNAGB213A	B	C2	2	2	50.853	0.172	32	LGM	0.0054	49.625
CNAGC111A	C	C1	3	1	52.206	0.170	32	LGM	0.0053	50.293
CNAGC112A	C	C1	3	1	51.146	0.173	32	MGM	0.0054	50.362
CNAGC113A	C	C1	3	1	50.384	0.174	32	LGM	0.0054	49.845
CNAGC114A	C	C1	3	1	50.113	0.174	32	LGM	0.0054	49.448
CNAGC211A	C	C2	3	2	50.818	0.172	32	LGM	0.0054	49.673
CNAGC212A	C	C2	3	2	50.071	0.176	32	LGM	0.0055	50.151
CNAGC213A	C	C2	3	2	51.728	0.177	32	LGM	0.0055	52.115

Average	50.308	
Standard Dev.	0.830	
Coeff. of Var. [%]	1.651	
Min.	48.305	
Max.	52.206	
Number of Spec.	21	

$Average_{norm}$	0.0054	49.842
$Standard\ Dev._{norm}$		0.793
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.592
Min.	0.0053	48.350
Max.	0.0055	52.115
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
20
30
40
50
60
Laminate Open Hole Compression Strength [ksi]

Laminate Open Hole Compression Properties (OHC1) -- (ETW) Strength

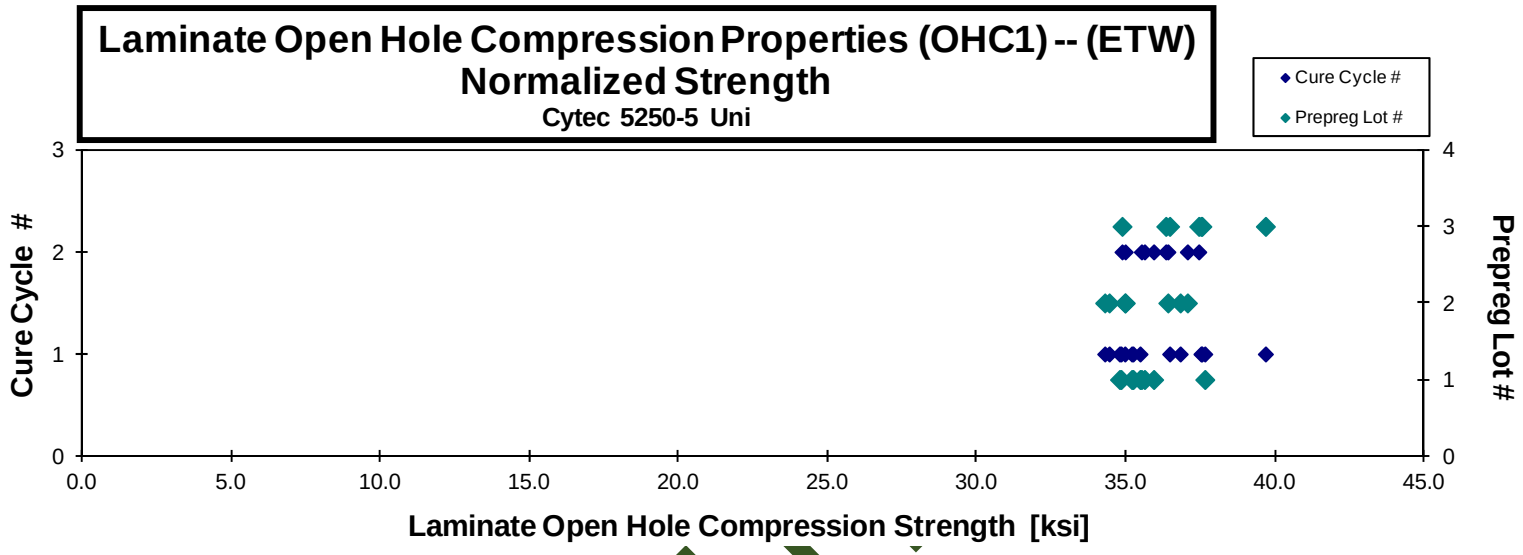
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAGA116J	A	C1	1	1	35.241	0.176	32	LGM	0.0055	35.238
CNAGA117J	A	C1	1	1	36.385	0.172	32	LGM	0.0054	35.472
CNAGA118J	A	C1	1	1	34.911	0.176	32	LGM	0.0055	34.832
CNAGA119J	A	C1	1	1	35.038	0.177	32	LGM	0.0055	35.191
CNAGA11AJ	A	C1	1	1	34.719	0.176	32	LGM	0.0055	34.784
CNAGA11BJ	A	C1	1	1	37.815	0.175	32	LGM	0.0055	37.643
CNAGA216J	A	C2	1	2	35.333	0.177	32	LGM	0.0055	35.620
CNAGA217J	A	C2	1	2	37.394	0.169	32	LGM	0.0053	35.928
CNAGA218J	A	C2	1	2	35.673	0.175	32	LGM	0.0055	35.518
CNAGB116J	B	C1	2	1	37.697	0.172	32	LGM	0.0054	36.819
CNAGB117J	B	C1	2	1	34.018	0.178	32	LGM	0.0056	34.437
CNAGB118J	B	C1	2	1	34.674	0.177	32	LGM	0.0055	34.960
CNAGB119J	B	C1	2	1	34.066	0.177	32	LGM	0.0055	34.289
CNAGB216J	B	C2	2	2	37.019	0.166	32	LGM	0.0052	34.975
CNAGB217J	B	C2	2	2	37.263	0.172	32	LGM	0.0054	36.406
CNAGB218J	B	C2	2	2	37.933	0.172	32	LGM	0.0054	37.060
CNAGC116J	C	C1	3	1	39.974	0.175	32	LGM	0.0055	39.675
CNAGC117J	C	C1	3	1	38.312	0.168	32	LGM	0.0052	36.465
CNAGC118J	C	C1	3	1	38.314	0.172	32	LGM	0.0054	37.545
CNAGC119J	C	C1	3	1	38.047	0.174	32	LGM	0.0054	37.513
CNAGC216J	C	C2	3	2	35.285	0.174	32	LGM	0.0054	34.868
CNAGC217J	C	C2	3	2	37.116	0.172	32	LGM	0.0054	36.336
CNAGC218J	C	C2	3	2	37.267	0.177	32	LGM	0.0055	37.440

Average	36.500	
Standard Dev.	1.613	
Coeff. of Var. [%]	4.419	
Min.	34.018	
Max.	39.974	
Number of Spec.	23	

$Average_{norm}$	0.0054	36.044
$Standard\ Dev._{norm}$		1.327
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.681
Min.	0.0052	34.289
Max.	0.0056	39.675
Number of Spec.		23


Laminate Open Hole Compression Properties (OHC1) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
Laminate Open Hole Compression Strength [ksi]

4.23 "10/80/10" Open-Hole Compression 2 Properties (OHC2)

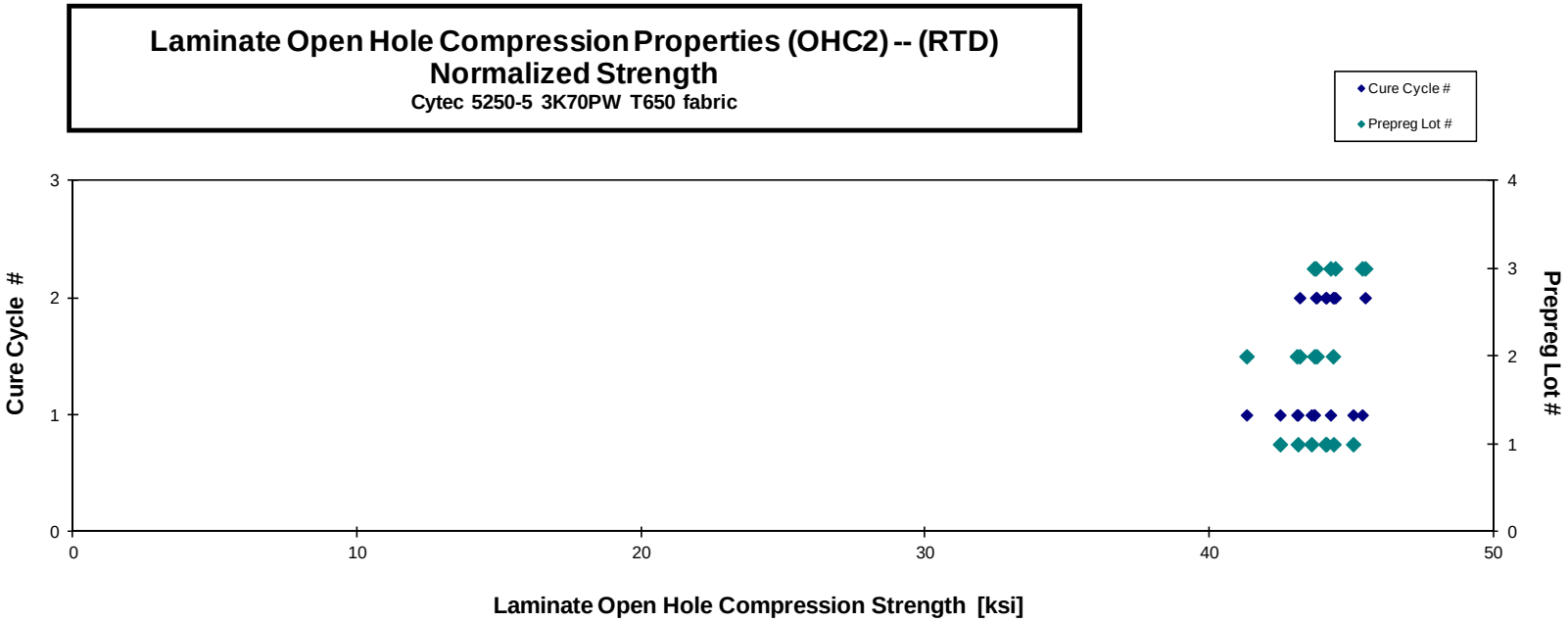
Laminate Open Hole Compression Properties (OHC2) -- (RTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAHA111A	A	C1	1	1	42.738	0.219	40	MGM	0.0055	42.495
CNAHA112A	A	C1	1	1	42.733	0.222	40	MGM	0.0056	43.124
CNAHA113A	A	C1	1	1	42.933	0.223	40	MGM	0.0056	43.600
CNAHA114A	A	C1	1	1	44.486	0.223	40	MGM	0.0056	45.069
CNAHA211A	A	C2	1	2	44.362	0.219	40	MGM	0.0055	44.126
CNAHA212A	A	C2	1	2	44.059	0.222	40	MGM	0.0055	44.380
CNAHA213A	A	C2	1	2	43.460	0.223	40	MGM	0.0056	44.095
CNAHB111A	B	C1	2	1	42.303	0.215	40	LGM	0.0054	41.316
CNAHB112A	B	C1	2	1	43.521	0.218	40	LGM	0.0054	43.089
CNAHB113A	B	C1	2	1	43.959	0.219	40	LGM	0.0055	43.703
CNAHB211A	B	C2	2	2	45.293	0.213	40	LGM	0.0053	43.783
CNAHB212A	B	C2	2	2	44.569	0.213	40	LGM	0.0053	43.185
CNAHB213A	B	C2	2	2	45.608	0.214	40	LGM	0.0053	44.360
CNAHC111A	C	C1	3	1	44.690	0.215	40	LGM	0.0054	43.694
CNAHC112A	C	C1	3	1	44.661	0.218	40	LGM	0.0055	44.272
CNAHC113A	C	C1	3	1	45.574	0.219	40	LGM	0.0055	45.388
CNAHC211A	C	C2	3	2	44.659	0.216	40	AGM	0.0054	43.752
CNAHC212A	C	C2	3	2	45.627	0.219	40	AGM	0.0055	45.493
CNAHC213A	C	C2	3	2	44.370	0.220	40	MGM	0.0055	44.438

Average	44.190	
Standard Dev.	1.017	
Coeff. of Var. [%]	2.302	
Min.	42.303	
Max.	45.627	
Number of Spec.	19	

$Average_{norm}$	0.0055	43.861
$Standard\ Dev._{norm}$		0.991
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.259
Min.	0.0053	41.316
Max.	0.0056	45.493
Number of Spec.		19


Laminate Open Hole Compression Properties (OHC2) -- (RTD)
Normalized Strength
Cytec 5250-5 3K70PW T650 fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Open Hole Compression Strength [ksi]
0
1
2
3
4
0
10
20
30
40
50

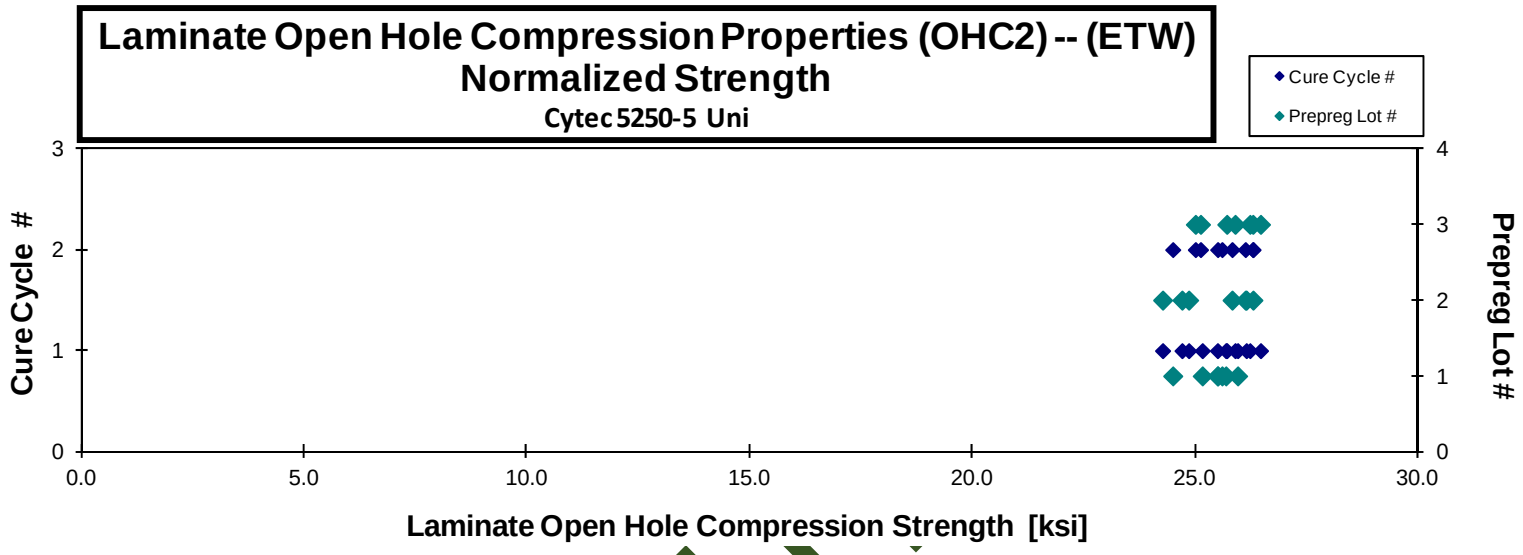
Laminate Open Hole Compression Properties (OHC2) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle 1	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAHA115J	A	C1	1	1	25.384	0.223	40	LGM	0.0056	25.692
CNAHA116J	A	C1	1	1	25.215	0.223	40	LGM	0.0056	25.503
CNAHA117J	A	C1	1	1	25.153	0.220	40	LGM	0.0055	25.163
CNAHA118J	A	C1	1	1	25.758	0.222	40	LGM	0.0055	25.957
CNAHA215J	A	C2	1	2	24.067	0.224	40	LGM	0.0056	24.499
CNAHA216J	A	C2	1	2	25.647	0.219	40	LGM	0.0055	25.509
CNAHA217J	A	C2	1	2	25.261	0.223	40	LGM	0.0056	25.605
CNAHB115J	B	C1	2	1	24.941	0.218	40	LGM	0.0054	24.707
CNAHB116J	B	C1	2	1	25.235	0.212	40	LGM	0.0053	24.272
CNAHB117J	B	C1	2	1	25.377	0.216	40	LGM	0.0054	24.858
CNAHB118J	B	C1	2	1	26.543	0.217	40	LGM	0.0054	26.150
CNAHB215J	B	C2	2	2	26.568	0.214	40	LGM	0.0053	25.832
CNAHB216J	B	C2	2	2	27.132	0.213	40	LGM	0.0053	26.301
CNAHB217J	B	C2	2	2	27.233	0.211	40	LGM	0.0053	26.130
CNAHC115J	C	C1	3	1	26.154	0.218	40	LGM	0.0054	25.898
CNAHC116J	C	C1	3	1	26.771	0.216	40	LGM	0.0054	26.231
CNAHC117J	C	C1	3	1	25.971	0.218	40	LGM	0.0054	25.713
CNAHC118J	C	C1	3	1	26.613	0.219	40	LGM	0.0055	26.472
CNAHC215J	C	C2	3	2	26.417	0.219	40	LGM	0.0055	26.297
CNAHC216J	C	C2	3	2	25.320	0.218	40	LGM	0.0055	25.123
CNAHC217J	C	C2	3	2	24.991	0.220	40	LGM	0.0055	25.008

	Strength [ksi]
Average	25.798
Standard Dev.	0.821
Coeff. of Var. [%]	3.182
Min.	24.067
Max.	27.233
Number of Spec.	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
$Average_{norm}$	0.0055	25.568
$Standard\ Dev._{norm}$		0.636
Coeff. of Var. $[\%]_{norm}$		2.489
Min.	0.0053	24.272
Max.	0.0056	26.472
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC2) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Laminate Open Hole Compression Strength [ksi]

4.24 “50/40/10” Open-Hole Compression 3 Properties (OHC3)

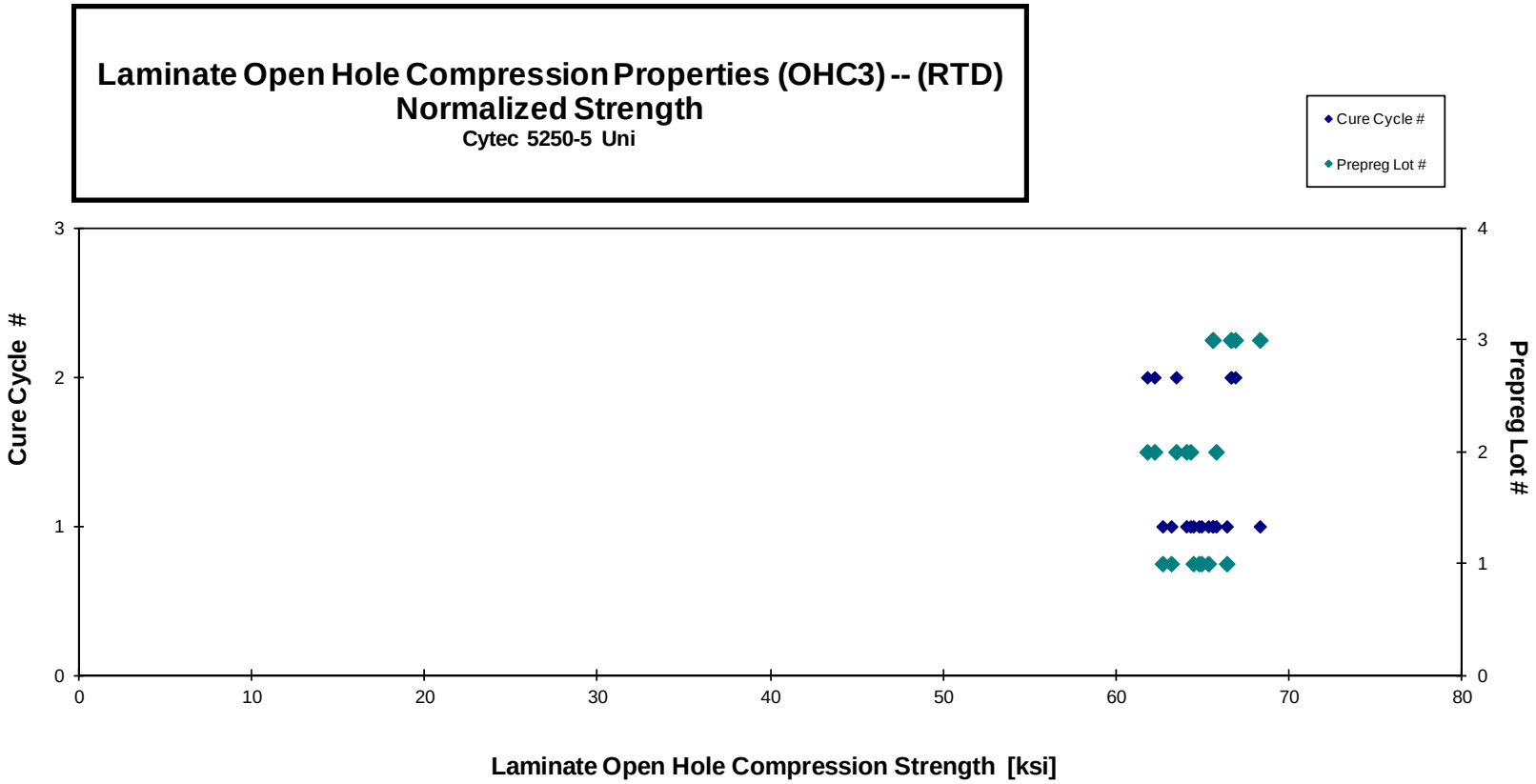
Laminate Open Hole Compression Properties (OHC3) -- (RTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]
0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAIA111A	A	C1	1	1	65.398	0.213	40	LGM	0.0053	63.174
CNAIA112A	A	C1	1	1	65.779	0.218	40	LGM	0.0055	65.321
CNAIA113A	A	C1	1	1	66.052	0.221	40	LGM	0.0055	66.387
CNAIA121A	A	C1	1	1	64.325	0.220	40	MGM	0.0055	64.452
CNAIA122A	A	C1	1	1	62.563	0.220	40	LGM	0.0055	62.677
CNAIA123A	A	C1	1	1	64.050	0.223	40	MGM	0.0056	64.777
CNAIA124A	A	C1	1	1	64.385	0.222	40	LGM / AGM	0.0055	64.921
CNAIB111A	B	C1	2	1	66.493	0.218	40	LGM	0.0054	65.768
CNAIB112A	B	C1	2	1	64.923	0.217	40	LGM	0.0054	64.052
CNAIB113A	B	C1	2	1	64.722	0.219	40	LGM	0.0055	64.290
CNAIB211A	B	C2	2	2	64.790	0.210	40	LGM	0.0052	61.781
CNAIB212A	B	C2	2	2	64.017	0.214	40	LGM	0.0053	62.208
CNAIB213A	B	C2	2	2	64.557	0.216	40	LGM	0.0054	63.456
CNAIC111A	C	C1	3	1	67.662	0.213	40	LGM	0.0053	65.586
CNAIC112A	C	C1	3	1	69.231	0.217	40	LGM	0.0054	68.303
CNAIC113A	C	C1	3	1	66.273	0.218	40	LGM	0.0054	65.566
CNAIC211A	C	C2	3	2	68.833	0.214	40	LGM	0.0053	66.877
CNAIC212A	C	C2	3	2	68.019	0.216	40	LGM	0.0054	66.648
CNAIC213A	C	C2	3	2	67.224	0.218	40	LGM	0.0055	66.613

Batch A Cure 2 was excluded for bad layup

Average	**65.752**	**$Average_{norm}$**	**0.0054**	**64.887**
Standard Dev.	**1.790**	**$Standard\ Dev._{norm}$**		**1.729**
Coeff. of Var. [%]	**2.722**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**2.665**
Min.	**62.563**	**Min.**	**0.0052**	**61.781**
Max.	**69.231**	**Max.**	**0.0056**	**68.303**
Number of Spec.	**19**	**Number of Spec.**		**19**


Laminate Open Hole Compression Properties (OHC3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
20
30
40
50
60
70
80
Laminate Open Hole Compression Strength [ksi]

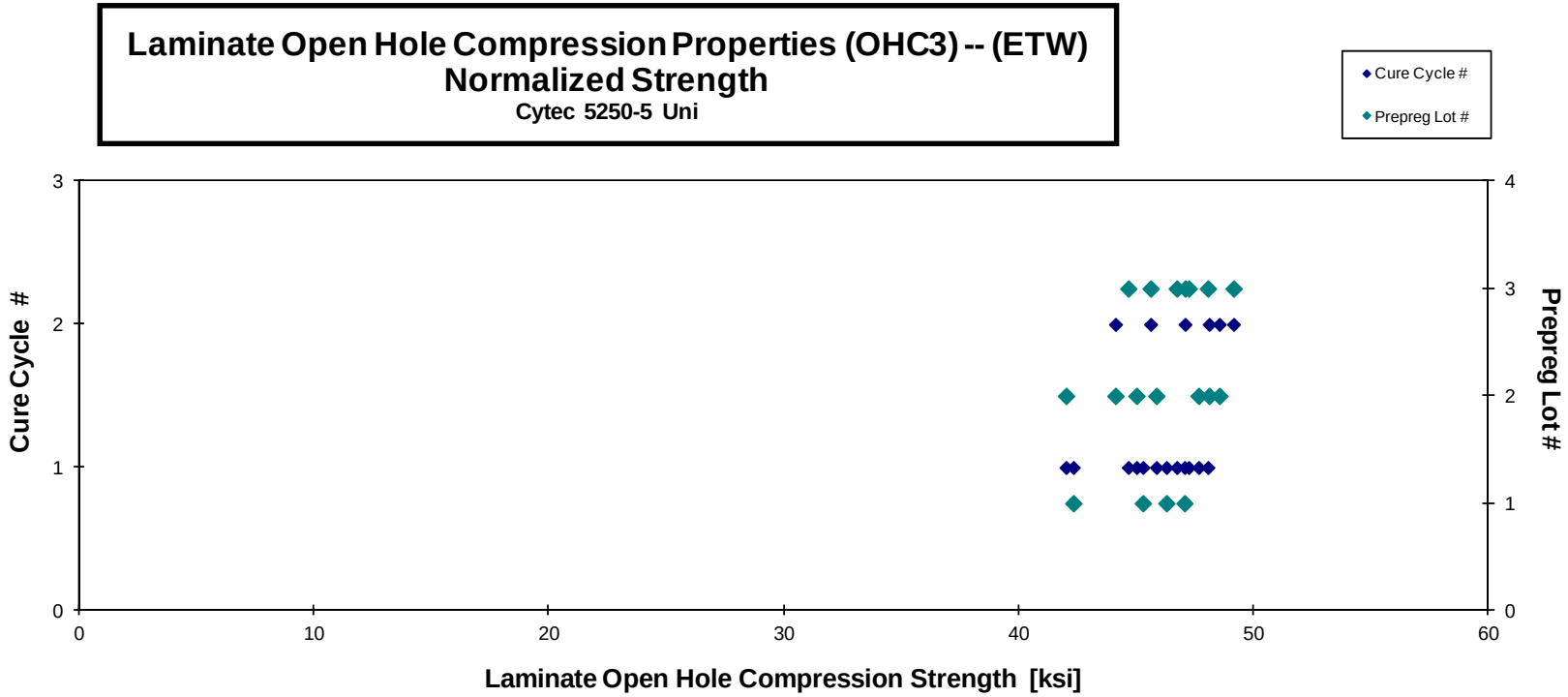
Laminate Open Hole Compression Properties (OHC3) -- (ETW)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Modes	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAIA114J	A	C1	1	1	46.751	0.221	40	LGM	0.0055	47.059
CNAIA115J	A	C1	1	1	42.139	0.221	40	LGM	0.0055	42.328
CNAIA117J	A	C1	1	1	47.729	0.213	40	LGM	0.0053	46.290
CNAIA118J	A	C1	1	1	45.912	0.217	40	LGM	0.0054	45.290
CNAIB115J	B	C1	2	1	47.966	0.219	40	LGM	0.0055	47.661
CNAIB116J	B	C1	2	1	46.876	0.215	40	LGM	0.0054	45.864
CNAIB117J	B	C1	2	1	45.235	0.219	40	LGM	0.0055	45.019
CNAIB118J	B	C1	2	1	42.034	0.220	40	LGM	0.0055	42.018
CNAIB215J	B	C2	2	2	44.497	0.218	40	LGM	0.0055	44.122
CNAIB216J	B	C2	2	2	49.797	0.213	40	LGM	0.0053	48.111
CNAIB217J	B	C2	2	2	49.458	0.216	40	LGM	0.0054	48.544
CNAIC115J	C	C1	3	1	45.022	0.218	40	LGM	0.0055	44.667
CNAIC116J	C	C1	3	1	48.206	0.213	40	LGM	0.0053	46.735
CNAIC117J	C	C1	3	1	48.672	0.217	40	LGM	0.0054	48.060
CNAIC118J	C	C1	3	1	47.654	0.218	40	LGM	0.0055	47.238
CNAIC215J	C	C2	3	2	46.363	0.216	40	LGM	0.0054	45.619
CNAIC216J	C	C2	3	2	50.484	0.214	40	LGM	0.0054	49.150
CNAIC217J	C	C2	3	2	47.833	0.217	40	LGM	0.0054	47.086

Batch A Cure 2 was excluded for bad layup

Average	**46.813**	**Average$_{norm}$**	**0.0054**	**46.159**
Standard Dev.	**2.370**	**Standard Dev.$_{norm}$**		**2.002**
Coeff. of Var. [%]	**5.062**	**Coeff. of Var. [%]$_{norm}$**		**4.337**
Min.	**42.034**	**Min.**	**0.0053**	**42.018**
Max.	**50.484**	**Max.**	**0.0055**	**49.150**
Number of Spec.	**18**	**Number of Spec.**		**18**


Laminate Open Hole Compression Properties (OHC3) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Open Hole Compression Strength [ksi]
0
10
20
30
40
50
60
0
1
2
3
4

4.25 “25/50/25” Filled-Hole Compression 1 Properties (FHC1)

Laminate Filled Hole Compression Properties (FHC1) -- (RTD) Strength
Cytec 5250-5 Uni

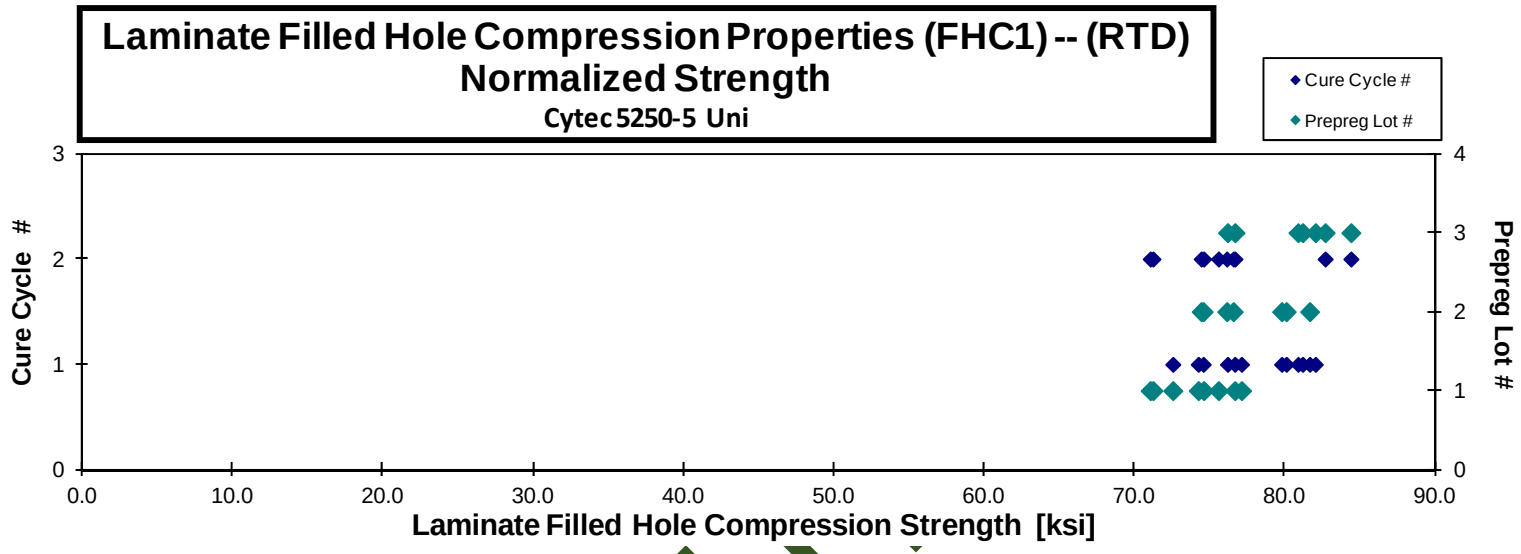
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA7A111A	A	C1	1	1	80.037	0.170	32	LGF	0.0053	77.119
CNA7A113A	A	C1	1	1	74.607	0.175	32	LGF	0.0055	74.240
CNA7A114A	A	C1	1	1	77.059	0.175	32	LGF	0.0055	76.672
CNA7A115A	A	C1	1	1	72.984	0.176	32	LGF	0.0055	72.548
CNA7A211A	A	C2	1	2	79.616	0.167	32	LGF	0.0052	75.582
CNA7A212A	A	C2	1	2	72.080	0.173	32	LGF	0.0054	71.043
CNA7A213A	A	C2	1	2	70.854	0.177	32	LGF	0.0055	71.230
CNA7A214A	A	C2	1	2	74.101	0.177	32	LGF	0.0055	74.606
CNA7B111A	B	C1	2	1	76.982	0.170	32	LGF	0.0053	74.569
CNA7B112A	B	C1	2	1	80.788	0.174	32	LGF	0.0054	79.786
CNA7B113A	B	C1	2	1	80.341	0.175	32	LGF	0.0055	80.097
CNA7B114A	B	C1	2	1	81.879	0.176	32	LGF	0.0055	81.654
CNA7B211A	B	C2	2	2	81.056	0.166	32	LGF	0.0052	76.573
CNA7B212A	B	C2	2	2	78.393	0.171	32	LGF	0.0053	76.136
CNA7B213A	B	C2	2	2	75.879	0.173	32	LGF	0.0054	74.434
CNA7C111A*	C	C1	3	1	76.647	0.175	32	LGF	0.0055	76.190
CNA7C112A	C	C1	3	1	82.312	0.175	32	LGF	0.0055	82.031
CNA7C113A	C	C1	3	1	81.893	0.174	32	LGF	0.0055	81.179
CNA7C114A	C	C1	3	1	82.162	0.173	32	LGF	0.0054	80.878
CNA7C211A	C	C2	3	2	87.417	0.170	32	LGF	0.0053	84.396
CNA7C212A	C	C2	3	2	77.705	0.174	32	LGF	0.0054	76.683
CNA7C213A	C	C2	3	2	83.299	0.175	32	LGF	0.0055	82.684

*Thickness average based on one measurement only

Average	78.550	
Standard Dev.	4.094	
Coeff. of Var. [%]	5.213	
Min.	70.854	
Max.	87.417	
Number of Spec.	22	

$Average_{norm}$	0.0054	77.288
$Standard\ Dev._{norm}$		3.781
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.893
Min.	0.0052	71.043
Max.	0.0055	84.396
Number of Spec.		22


Laminate Filled Hole Compression Properties (FHC1) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Laminate Filled Hole Compression Strength [ksi]

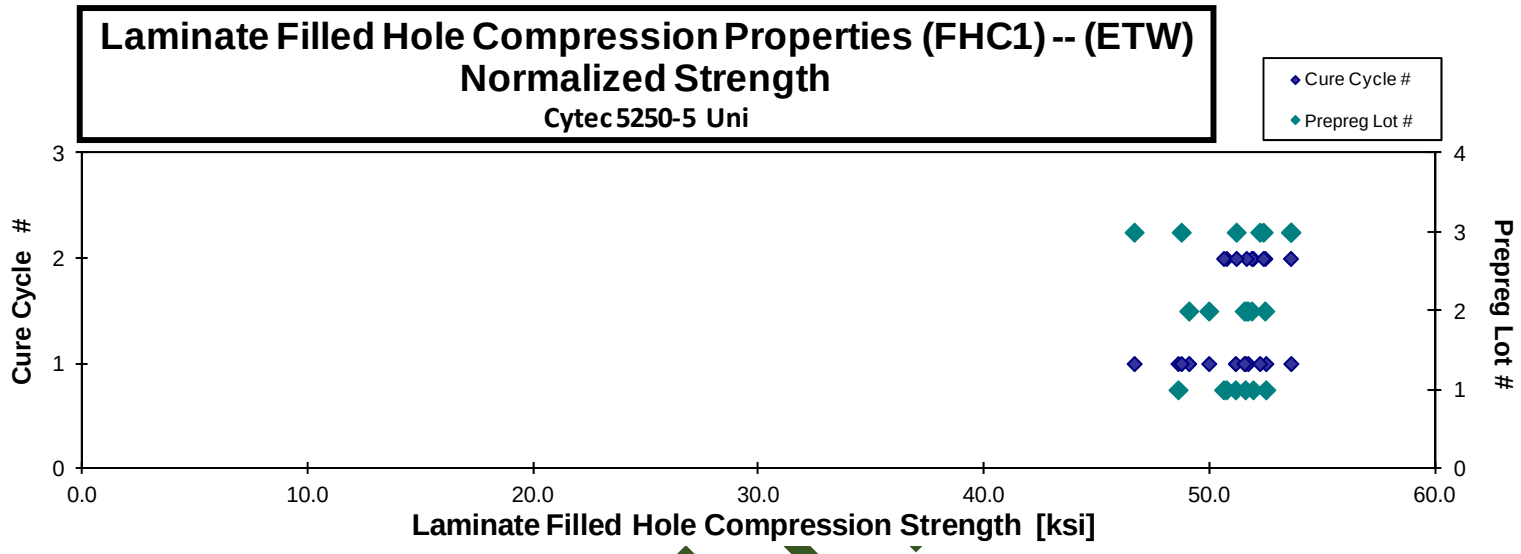
Laminate Filled Hole Compression Properties (FHC1) -- (ETW) Strength

Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA7A116J	A	C1	1	1	53.771	0.169	32	LGF	0.0053	51.571
CNA7A117J	A	C1	1	1	49.630	0.172	32	LGF	0.0054	48.596
CNA7A118J	A	C1	1	1	51.892	0.173	32	LGF	0.0054	51.140
CNA7A119J	A	C1	1	1	53.063	0.174	32	LGF	0.0054	52.490
CNA7A216J	A	C2	1	2	53.340	0.167	32	LGF	0.0052	50.739
CNA7A217J	A	C2	1	2	51.262	0.174	32	LGF	0.0054	50.617
CNA7A218J	A	C2	1	2	51.421	0.178	32	LGF	0.0056	51.918
CNA7B115J	B	C1	2	1	49.817	0.177	32	LGF	0.0055	49.959
CNA7B117J	B	C1	2	1	52.415	0.174	32	LGF	0.0054	51.696
CNA7B118J	B	C1	2	1	51.860	0.175	32	LGF	0.0055	51.531
CNA7B119J	B	C1	2	1	49.301	0.175	32	LGF	0.0055	49.072
CNA7B216J	B	C2	2	2	54.843	0.166	32	LGF	0.0052	51.856
CNA7B217J	B	C2	2	2	53.358	0.170	32	LGF	0.0053	51.625
CNA7B218J	B	C2	2	2	53.744	0.172	32	LGF	0.0054	52.447
CNA7C115J	C	C1	3	1	47.312	0.174	32	LGF	0.0054	46.649
CNA7C116J	C	C1	3	1	49.564	0.173	32	LGF	0.0054	48.738
CNA7C117J	C	C1	3	1	53.062	0.173	32	LGF	0.0054	52.218
CNA7C118J	C	C1	3	1	54.425	0.173	32	LGF	0.0054	53.600
CNA7C216J	C	C2	3	2	54.971	0.172	32	LGF	0.0054	53.586
CNA7C217J	C	C2	3	2	52.941	0.174	32	LGF	0.0054	52.374
CNA7C218J	C	C2	3	2	51.533	0.175	32	LGF	0.0055	51.176

	Strength		$Strength_{norm}$
Average	52.073	$Average_{norm}$	51.124
Standard Dev.	2.031	$Standard\ Dev._{norm}$	1.714
Coeff. of Var. [%]	3.901	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.353
Min.	47.312	Min.	46.649
Max.	54.971	Max.	53.600
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Compression Properties (FHC1) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
Laminate Filled Hole Compression Strength [ksi]

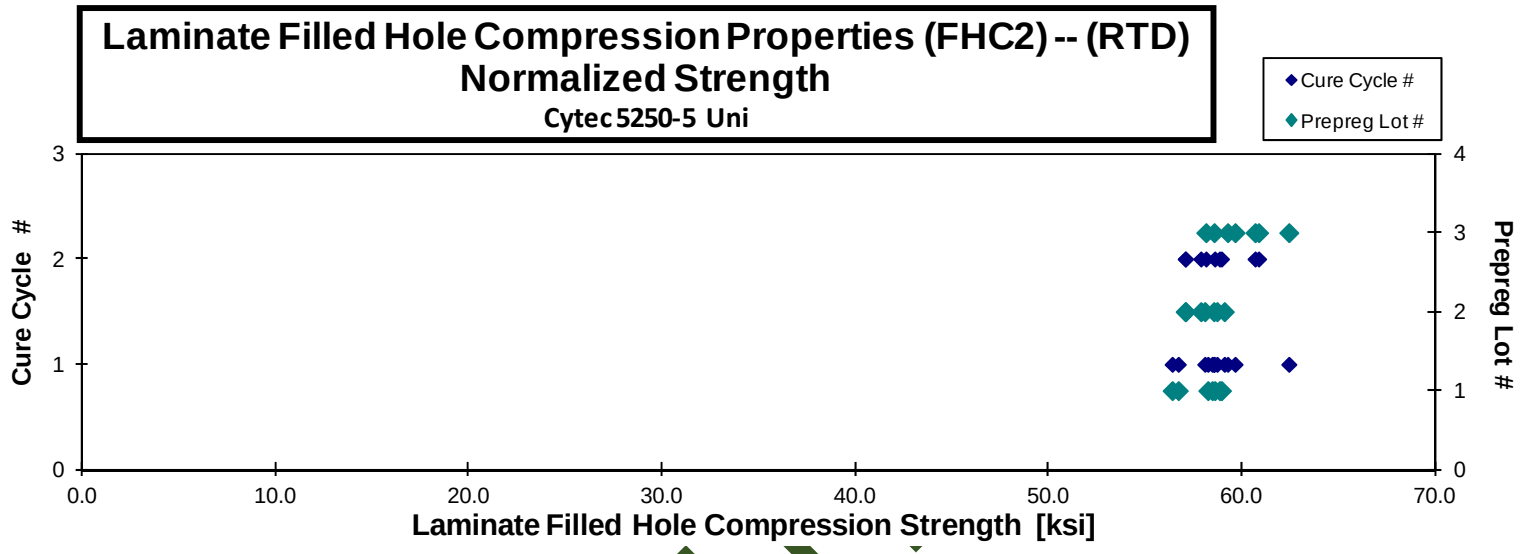
4.26 "10/80/10" Filled-Hole Compression 2 Properties (FHC2)

Laminate Filled Hole Compression Properties (FHC2) -- (RTD) Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA8A111A	A	C1	1	1	58.642	0.218	40	LGM	0.0055	58.238
CNA8A112A	A	C1	1	1	57.859	0.222	40	LGM	0.0056	58.463
CNA8A113A	A	C1	1	1	55.506	0.225	40	LGM	0.0056	56.708
CNA8A114A	A	C1	1	1	55.422	0.224	40	LGM	0.0056	56.392
CNA8A211A	A	C2	1	2	58.796	0.219	40	AGM	0.0055	58.596
CNA8A212A	A	C2	1	2	59.183	0.219	40	AGM	0.0055	58.946
CNA8A213A	A	C2	1	2	58.476	0.221	40	AGM	0.0055	58.844
CNA8B111A	B	C1	2	1	59.431	0.215	40	LGF	0.0054	58.080
CNA8B112A	B	C1	2	1	60.111	0.215	40	LGF	0.0054	58.713
CNA8B113A	B	C1	2	1	60.731	0.212	40	AGF	0.0053	58.546
CNA8B114A	B	C1	2	1	60.495	0.215	40	AGF	0.0054	59.093
CNA8B211A	B	C2	2	2	59.765	0.210	40	MGF	0.0053	57.081
CNA8B212A	B	C2	2	2	58.169	0.216	40	MGF	0.0054	57.067
CNA8B213A	B	C2	2	2	58.749	0.217	40	MGF	0.0054	57.873
CNA8C111A	C	C1	3	1	60.085	0.214	40	MGF	0.0054	58.564
CNA8C112A	C	C1	3	1	59.683	0.219	40	MGF	0.0055	59.262
CNA8C113A	C	C1	3	1	62.748	0.219	40	MGF	0.0055	62.430
CNA8C114A	C	C1	3	1	60.171	0.218	40	MGF	0.0055	59.647
CNA8C211A	C	C2	3	2	59.205	0.216	40	MGF	0.0054	58.137
CNA8C212A	C	C2	3	2	61.123	0.218	40	MGF	0.0055	60.683
CNA8C213A	C	C2	3	2	60.368	0.222	40	MGF	0.0055	60.867

Average	**59.270**	**$Average_{norm}$**	**0.0054**	**58.678**
Standard Dev.	**1.683**	**$Standard\ Dev._{norm}$**		**1.419**
Coeff. of Var. [%]	**2.840**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**2.418**
Min.	**55.422**	**Min.**	**0.0053**	**56.392**
Max.	**62.748**	**Max.**	**0.0056**	**62.430**
Number of Spec.	**21**	**Number of Spec.**		**21**


Laminate Filled Hole Compression Properties (FHC2) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
Laminate Filled Hole Compression Strength [ksi]

Laminate Filled Hole Compression Properties (FHC2) -- (ETW) Strength

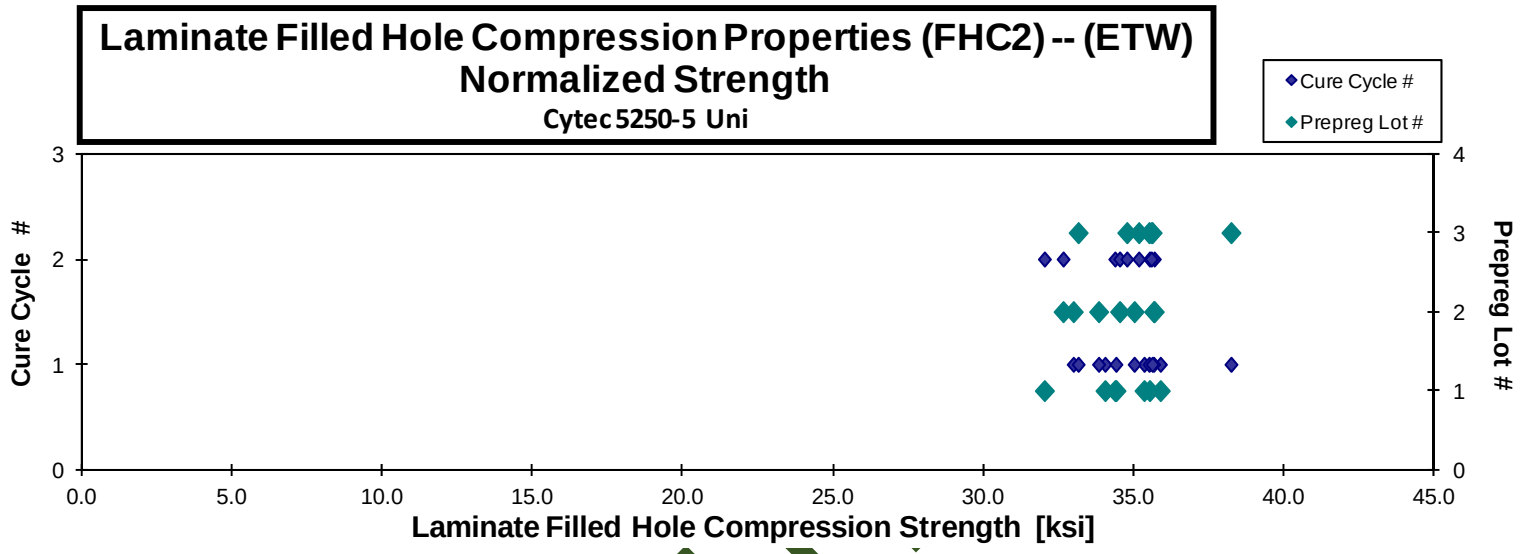
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA8A116J	A	C1	1	1	33.415	0.224	40	MGF	0.0056	34.017
CNA8A117J	A	C1	1	1	34.735	0.218	40	MGF	0.0054	34.383
CNA8A118J	A	C1	1	1	35.081	0.221	40	MGF	0.0055	35.317
CNA8A119J	A	C1	1	1	35.380	0.223	40	MGF	0.0056	35.858
CNA8A215J	A	C2	1	2	34.021	0.222	40	MGF	0.0056	34.346
CNA8A216J	A	C2	1	2	35.656	0.219	40	MGF	0.0055	35.499
CNA8A217J	A	C2	1	2	31.964	0.220	40	MGF	0.0055	32.001
CNA8B115J	B	C1	2	1	36.459	0.215	40	MGF	0.0054	35.635
CNA8B116J	B	C1	2	1	36.517	0.211	40	MGF	0.0053	34.989
CNA8B117J	B	C1	2	1	33.903	0.214	40	MGF	0.0053	32.963
CNA8B118J	B	C1	2	1	34.583	0.215	40	MGF	0.0054	33.805
CNA8B215J	B	C2	2	2	35.243	0.215	40	MGF	0.0054	34.503
CNA8B216J	B	C2	2	2	36.845	0.213	40	MGF	0.0053	35.656
CNA8B217J	B	C2	2	2	33.393	0.215	40	MGF	0.0054	32.624
CNA8C115J	C	C1	3	1	35.834	0.218	40	MGF	0.0054	35.484
CNA8C116J	C	C1	3	1	38.844	0.216	40	MGF	0.0054	38.208
CNA8C117J	C	C1	3	1	33.256	0.219	40	MGF	0.0055	33.125
CNA8C118J	C	C1	3	1	35.853	0.218	40	MGF	0.0055	35.587
CNA8C215J	C	C2	3	2	35.087	0.220	40	MGF	0.0055	35.140
CNA8C216J	C	C2	3	2	35.143	0.218	40	MGF	0.0054	34.744
CNA8C217J	C	C2	3	2	35.547	0.220	40	MGF	0.0055	35.558

Average		35.084
Standard Dev.		1.494
Coeff. of Var. [%]		4.257
Min.		31.964
Max.		38.844
Number of Spec.		21

$Average_{norm}$	0.0054	34.735
$Standard\ Dev._{norm}$		1.369
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.941
Min.	0.0053	32.001
Max.	0.0056	38.208
Number of Spec.		21


Laminate Filled Hole Compression Properties (FHC2) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
Laminate Filled Hole Compression Strength [ksi]

4.27 "50/40/10" Filled-Hole Compression 3 Properties (FHC3)

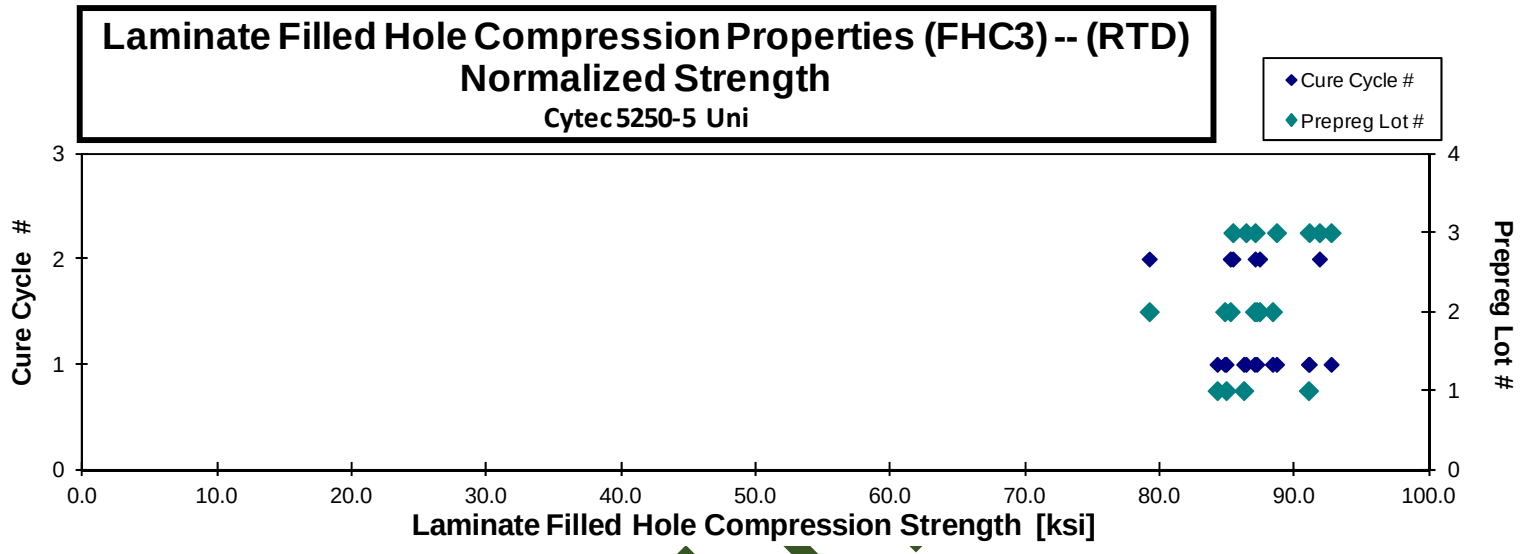
Laminate Filled Hole Compression Properties (FHC3) -- (RTD) Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA9A111A	A	C1	1	1	85.727	0.216	40	LGM	0.0054	84.252
CNA9A112A	A	C1	1	1	86.269	0.220	40	LGM	0.0055	86.230
CNA9A113A	A	C1	1	1	91.125	0.220	40	LGM	0.0055	91.035
CNA9A114A	A	C1	1	1	84.827	0.220	40	LGM	0.0055	84.917
CNA9B111A	B	C1	2	1	90.834	0.214	40	AGO	0.0054	88.364
CNA9B112A	B	C1	2	1	85.788	0.218	40	AGO	0.0054	84.813
CNA9B113A	B	C1	2	1	87.976	0.218	40	AGO	0.0054	87.029
CNA9B114A	B	C1	2	1	88.028	0.218	40	AGO	0.0054	87.188
CNA9B211A	B	C2	2	2	89.770	0.214	40	LGM/AGO	0.0054	87.403
CNA9B212A	B	C2	2	2	81.337	0.214	40	MGM	0.0054	79.211
CNA9B213A	B	C2	2	2	86.920	0.216	40	LGM/AGO	0.0054	85.228
CNA9C112A	C	C1	3	1	86.389	0.220	40	LGM/AGM	0.0055	86.389
CNA9C113A	C	C1	3	1	92.507	0.221	40	AGM	0.0055	92.718
CNA9C114A	C	C1	3	1	91.169	0.220	40	AGM	0.0055	91.093
CNA9C115A	C	C1	3	1	89.145	0.219	40	LGM/AGM	0.0055	88.665
CNA9C211A	C	C2	3	2	87.532	0.215	40	MGO	0.0054	85.423
CNA9C212A	C	C2	3	2	91.803	0.220	40	AGO/AGF	0.0055	91.851
CNA9C214A	C	C2	3	2	87.847	0.218	40	MGF	0.0055	87.075

No data from Batch A Cure 2 reported because of bad lay up on panel

Average	**88.055**	**$Average_{norm}$**	**0.0054**	**87.160**
Standard Dev.	**2.855**	**$Standard\ Dev._{norm}$**		**3.232**
Coeff. of Var. [%]	**3.242**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**3.708**
Min.	**81.337**	**Min.**	**0.0054**	**79.211**
Max.	**92.507**	**Max.**	**0.0055**	**92.718**
Number of Spec.	**18**	**Number of Spec.**		**18**


Laminate Filled Hole Compression Properties (FHC3) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Filled Hole Compression Strength [ksi]

Laminate Filled Hole Compression Properties (FHC3) -- (ETW) Strength

Cytec 5250-5 Uni

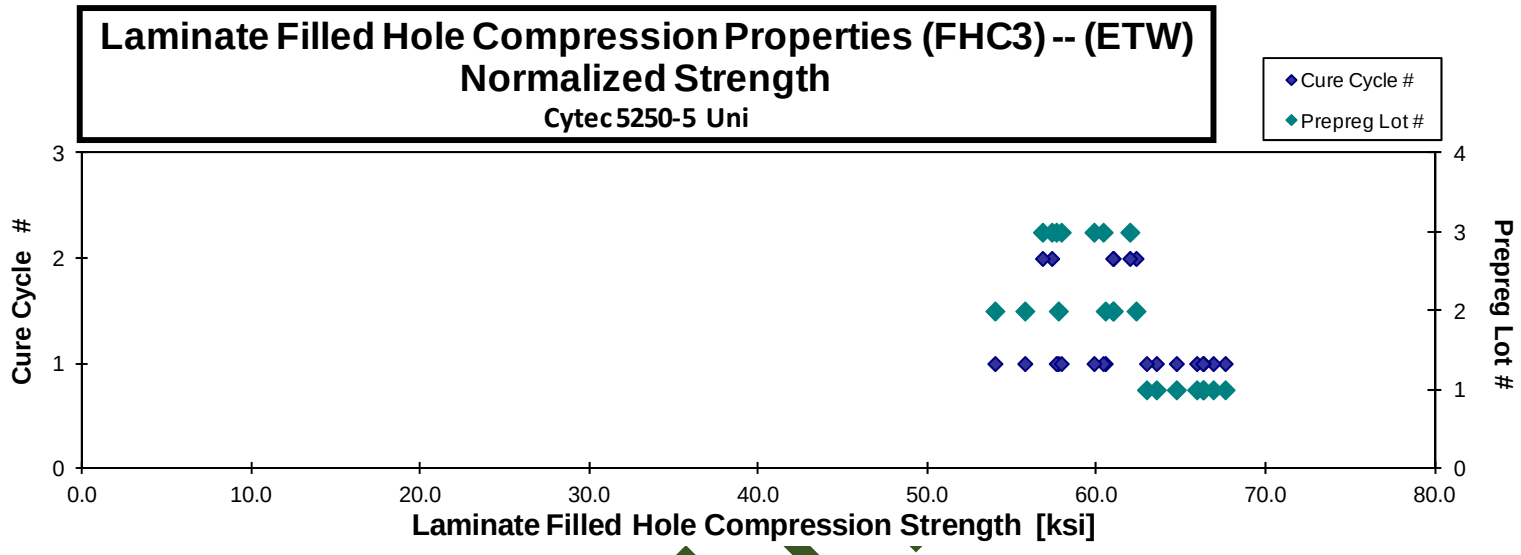
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNA9A116J	A	C1	1	1	67.148	0.221	40	LGF	0.0055	67.580
CNA9A117J	A	C1	1	1	65.845	0.220	40	LGF	0.0055	65.895
CNA9A118J	A	C1	1	1	65.877	0.223	40	LGF	0.0056	66.875
CNA9A119J	A	C1	1	1	66.849	0.218	40	LGF	0.0055	66.297
CNA9A11AJ	A	C1	1	1	63.236	0.221	40	LGF	0.0055	63.514
CNA9A11BJ	A	C1	1	1	62.555	0.221	40	LGF	0.0055	62.929
CNA9A11CJ	A	C1	1	1	64.311	0.221	40	LGF	0.0055	64.696
CNA9A121J	A	C1	1	1	65.696	0.222	40	LGF	0.0055	66.253
CNA9B115J	B	C1	2	1	58.124	0.218	40	LGF	0.0055	57.714
CNA9B116J	B	C1	2	1	57.601	0.213	40	LGF	0.0053	55.733
CNA9B117J	B	C1	2	1	61.363	0.217	40	LGF	0.0054	60.489
CNA9B118J	B	C1	2	1	54.637	0.217	40	LGF	0.0054	53.963
CNA9B215J	B	C2	2	2	63.642	0.215	40	LGF	0.0054	62.311
CNA9B216J	B	C2	2	2	61.911	0.217	40	LGF	0.0054	60.963
CNA9B217J	B	C2	2	2	62.926	0.213	40	LGF	0.0053	60.933
CNA9C117J	C	C1	3	1	60.563	0.219	40	LGF	0.0055	60.366
CNA9C118J	C	C1	3	1	59.787	0.220	40	LGF	0.0055	59.823
CNA9C119J	C	C1	3	1	57.723	0.220	40	LGF	0.0055	57.592
CNA9C11AJ	C	C1	3	1	58.417	0.218	40	LGF	0.0055	57.886
CNA9C215J	C	C2	3	2	62.705	0.217	40	LGF	0.0054	61.945
CNA9C216J	C	C2	3	2	58.636	0.215	40	LGF	0.0054	57.325
CNA9C217J	C	C2	3	2	56.696	0.220	40	LGF	0.0055	56.777

No data from Batch A Cure 2 reported because of bad lay up on panel

Average	61.648	
Standard Dev.	3.576	
Coeff. of Var. [%]	5.800	
Min.	54.637	
Max.	67.148	
Number of Spec.	22	

$Average_{norm}$	0.0055	61.266
$Standard\ Dev._{norm}$		3.934
$Coeff.\ of\ Var.\ [\%]_{norm}$		6.420
Min.	0.0053	53.963
Max.	0.0056	67.580
Number of Spec.		22


Laminate Filled Hole Compression Properties (FHC3) -- (ETW)
Normalized Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Filled Hole Compression Strength [ksi]
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
0
1
2
3
4

4.28 "25/50/25" Single-Shear Bearing 1 Properties (SSB1)

Laminate Single Shear Bearing Properties (SSB1) -- (RTD)
Strength
Cytec 5250-5 Uni

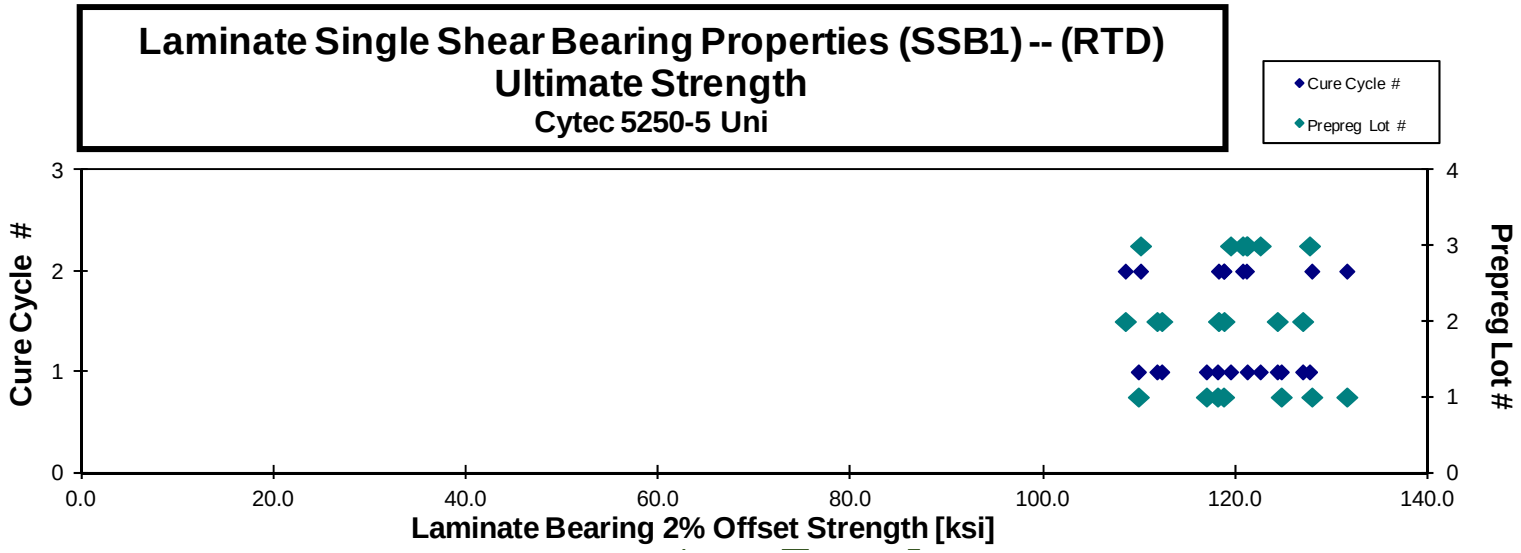
normalizing t_{ply} [in]: 0.0055

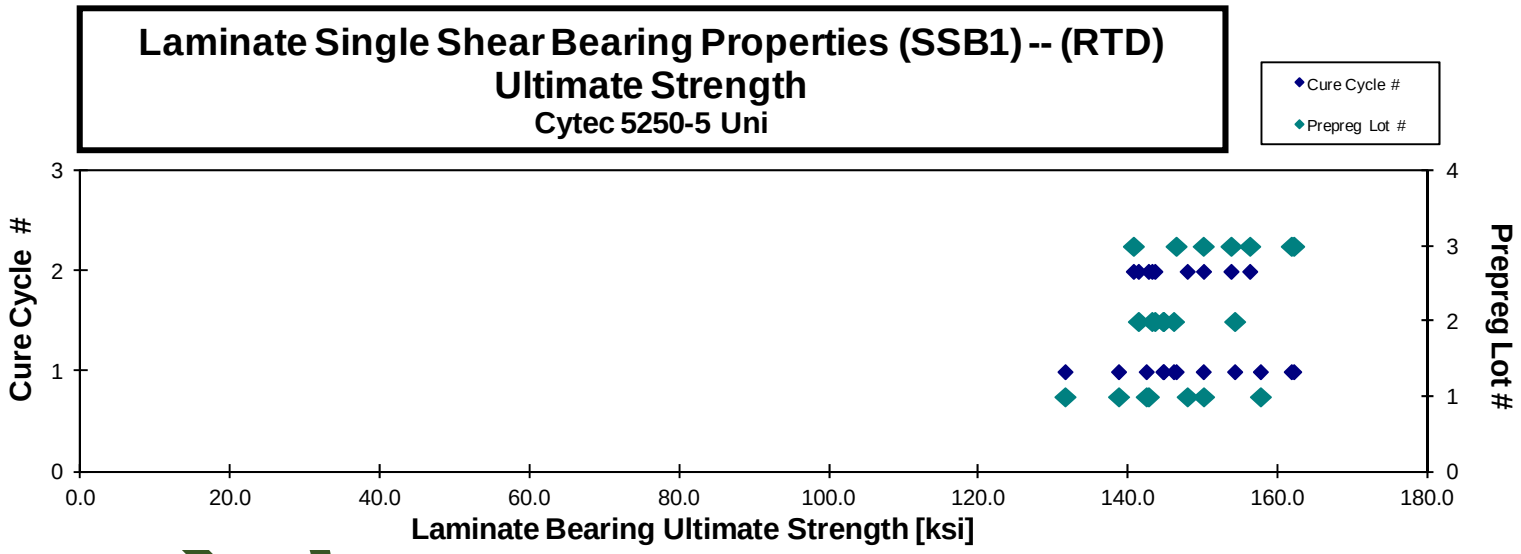
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset$_{norm}$ [ksi]	Ultimate Bearing$_{norm}$ [ksi]
CNA1A111A	A	C1	1	1	130.023	144.523	0.084	16	B1I	0.0053	124.827	138.747
CNA1A112A	A	C1	1	1	112.118	134.157	0.086	16	B1I	0.0054	109.973	131.591
CNA1A113A	A	C1	1	1	118.279	143.947	0.087	16	B1I	0.0054	117.047	142.448
CNA1A114A	A	C1	1	1	119.040	158.820	0.087	16	B1I	0.0055	118.206	157.707
CNA1A211A	A	C2	1	2	121.103	150.753	0.086	16	B1I	0.0054	118.832	147.926
CNA1A212A	A	C2	1	2	135.102	146.482	0.086	16	B1I	0.0054	131.647	142.737
CNA1A213A	A	C2	1	2	130.454	152.976	0.086	16	B1I	0.0054	128.008	150.108
CNA1B111A	B	C1	2	1	126.085	146.708	0.087	16	B1I	0.0054	124.414	144.763
CNA1B112A	B	C1	2	1	112.035	144.852	0.088	16	B1I	0.0055	111.908	144.687
CNA1B113A	B	C1	2	1	126.651	153.773	0.088	16	B1I	0.0055	127.059	154.268
CNA1B114A	B	C1	2	1	113.177	147.106	0.087	16	B1I	0.0055	112.406	146.103
CNA1B211A	B	C2	2	2	110.948	146.678	0.086	16	B1I	0.0054	108.616	143.594
CNA1B212A	B	C2	2	2	121.404	144.403	0.086	16	B1I	0.0054	118.875	141.394
CNA1B213A	B	C2	2	2	120.240	145.550	0.087	16	B1I	0.0054	118.305	143.207
CNA1C111A	C	C1	3	1	121.118	164.273	0.087	16	B1I	0.0054	119.558	162.157
CNA1C112A	C	C1	3	1	128.158	146.885	0.088	16	B1I	0.0055	127.770	146.439
CNA1C113A	C	C1	3	1	122.687	150.126	0.088	16	B1I	0.0055	122.640	150.069
CNA1C114A	C	C1	3	1	121.470	162.081	0.088	16	B1I	0.0055	121.286	161.835
CNA1C211A	C	C2	3	2	110.747	141.426	0.088	16	B1I	0.0055	110.202	140.730
CNA1C212A	C	C2	3	2	121.994	154.774	0.087	16	B1I	0.0055	121.209	153.778
CNA1C213A	C	C2	3	2	121.789	157.536	0.087	16	B1I	0.0055	120.820	156.283

Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)

Average	**121.173**	**149.420**	
Standard Dev.	**6.787**	**7.228**	
Coeff. of Var. [%]	**5.601**	**4.837**	
Min.	**110.747**	**134.157**	
Max.	**135.102**	**164.273**	
Number of Spec.	**21**	**21**	

Average	**0.0054**	**119.696**	**147.646**
Standard Dev.		**6.436**	**7.788**
Coeff. of Var. [%]$_{norm}$		**5.377**	**5.275**
Min.	**0.0053**	**108.616**	**131.591**
Max.	**0.0055**	**131.647**	**162.157**
Number of Spec.	**21**	**21**	**21**


Laminate Single Shear Bearing Properties (SSB1) -- (RTD)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Laminate Bearing 2% Offset Strength [ksi]


Laminate Single Shear Bearing Properties (SSB1) -- (RTD)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
Laminate Bearing Ultimate Strength [ksi]

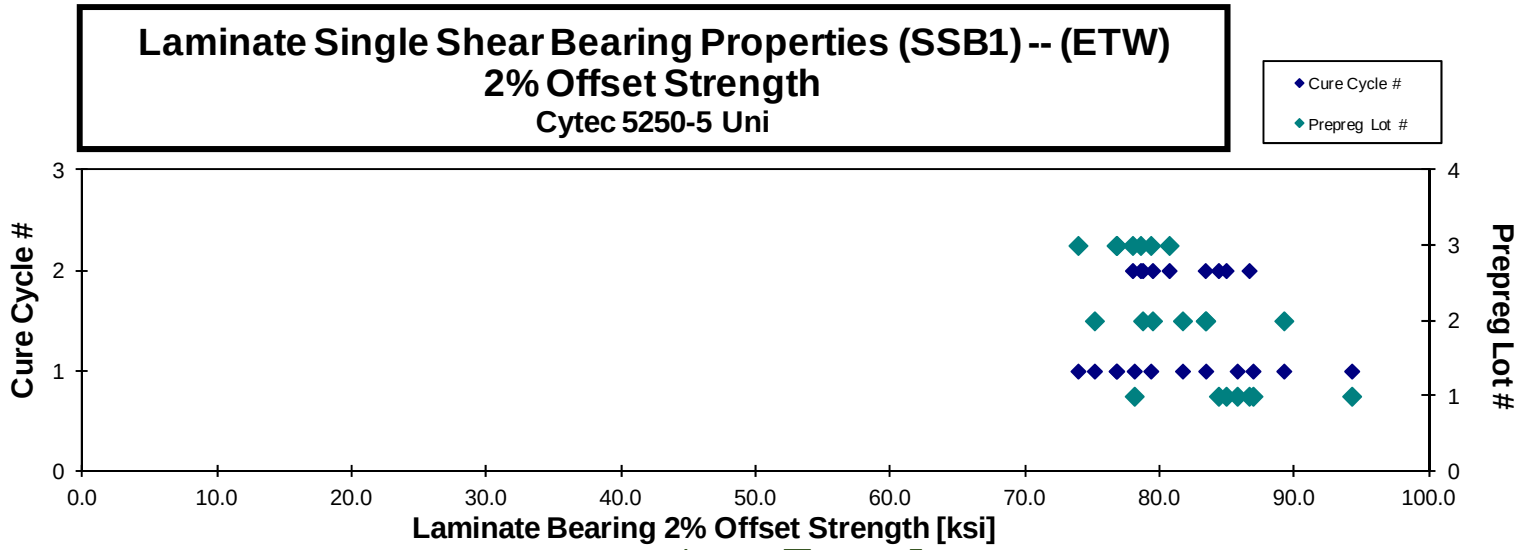
Laminate Single Shear Bearing Properties (SSB1) -- (ETW)
Strength
Cytec 5250-5 Uni

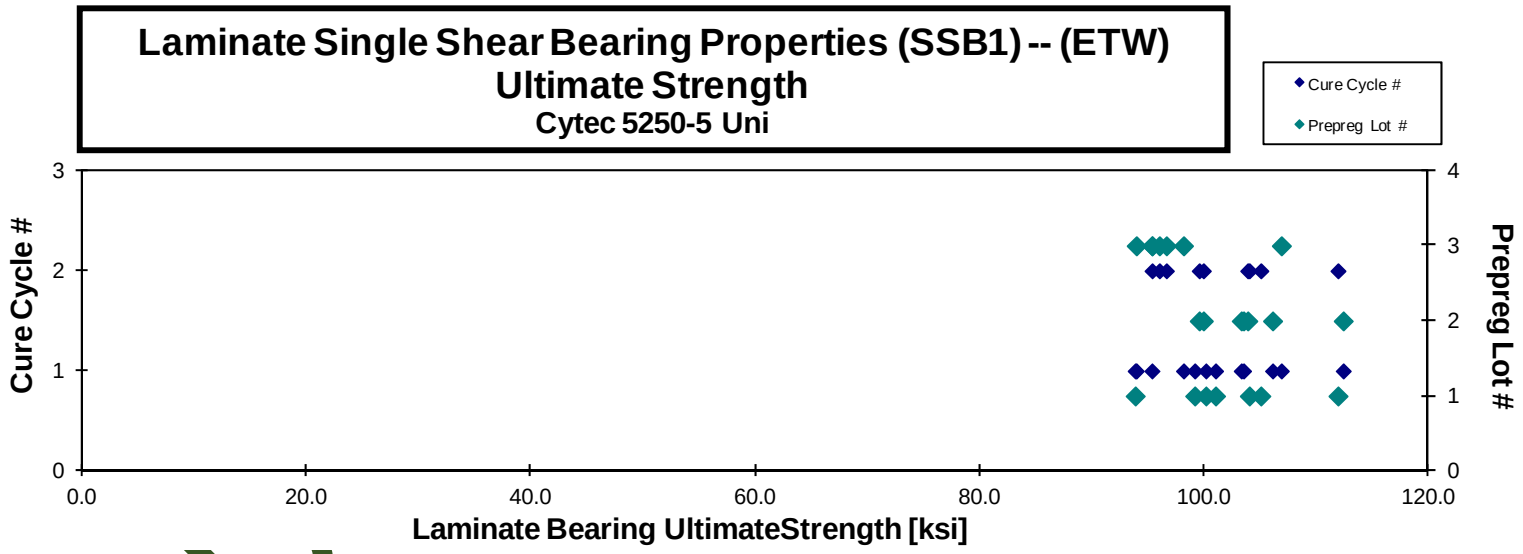
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% $Offset_{norm}$ [ksi]	Ultimate $Bearing_{norm}$ [ksi]
CNA1A117J	A	C1	1	1	88.909	103.796	0.085	16	B1I	0.0053	85.743	100.100
CNA1A118J	A	C1	1	1	88.853	95.895	0.086	16	B1I	0.0054	86.918	93.806
CNA1A119J	A	C1	1	1	93.748	100.434	0.088	16	B1I	0.0055	94.245	100.967
CNA1A11AJ	A	C1	1	1	78.966	100.209	0.087	16	B1I	0.0054	78.098	99.108
CNA1A216J	A	C2	1	2	90.787	117.249	0.084	16	B1I	0.0052	86.626	111.875
CNA1A217J	A	C2	1	2	88.737	110.460	0.084	16	B1I	0.0052	84.351	104.999
CNA1A218J	A	C2	1	2	86.406	105.797	0.086	16	B1I	0.0054	84.917	103.974
CNA1B116J	B	C1	2	1	84.465	109.661	0.085	16	B1I	0.0053	81.682	106.047
CNA1B117J	B	C1	2	1	90.719	105.007	0.087	16	B1I	0.0054	89.207	103.257
CNA1B118J	B	C1	2	1	84.609	113.962	0.087	16	B1I	0.0054	83.407	112.343
CNA1B119J	B	C1	2	1	76.311	105.074	0.087	16	B1I	0.0054	75.141	103.462
CNA1B216J	B	C2	2	2	81.364	106.332	0.086	16	B1I	0.0054	79.454	103.835
CNA1B217J	B	C2	2	2	84.718	101.490	0.087	16	B1I	0.0054	83.370	99.876
CNA1B218J	B	C2	2	2	80.149	101.316	0.086	16	B1I	0.0054	78.722	99.513
CNA1C116J	C	C1	3	1	79.150	98.275	0.085	16	B1I	0.0053	76.751	95.297
CNA1C117J	C	C1	3	1	80.780	108.785	0.086	16	B1I	0.0054	79.327	106.828
CNA1C118J	C	C1	3	1	75.406	100.078	0.086	16	B1I	0.0054	73.921	98.107
CNA1C119J	C	C1	3	1	79.723	97.482	0.085	16	B1I	0.0053	76.794	93.901
CNA1C216J	C	C2	3	2	79.059	97.185	0.087	16	B1I	0.0055	78.565	96.578
CNA1C217J	C	C2	3	2	77.848	95.166	0.088	16	B1I	0.0055	77.966	95.310
CNA1C218J	C	C2	3	2	80.337	95.538	0.088	16	B1I	0.0055	80.687	95.954

Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)

Average	**83.383**	**103.295**	**Average**	**0.0054**	**81.709**	**101.197**
Standard Dev.	**5.307**	**6.184**	**Standard Dev.**		**5.070**	**5.375**
Coeff. of Var. [%]	**6.364**	**5.987**	**Coeff. of Var. [%]$_{norm}$**		**6.205**	**5.312**
Min.	**75.406**	**95.166**	**Min.**	**0.0052**	**73.921**	**93.806**
Max.	**93.748**	**117.249**	**Max.**	**0.0055**	**94.245**	**112.343**
Number of Spec.	**21**	**21**	**Number of Spec.**	**21**	**21**	**21**


Laminate Single Shear Bearing Properties (SSB1) -- (ETW)
2% Offset Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Laminate Bearing 2% Offset Strength [ksi]

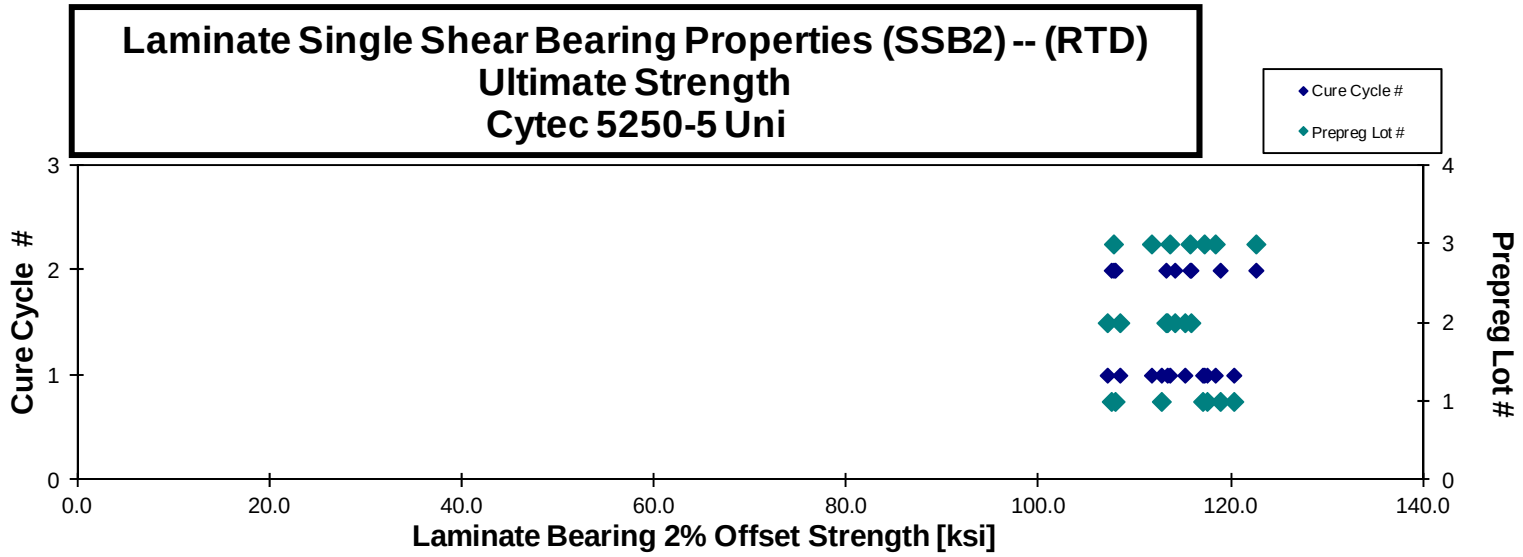

Laminate Single Shear Bearing Properties (SSB1) -- (ETW)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Bearing UltimateStrength [ksi]

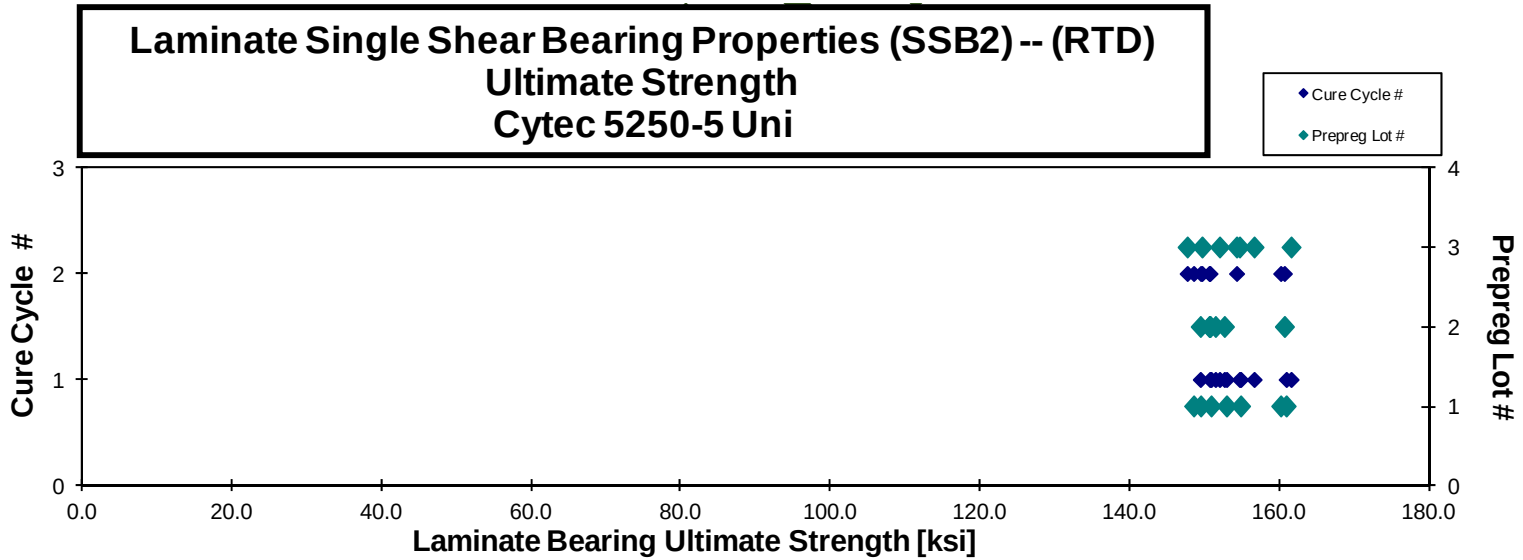
4.29 "10/80/10" Single-Shear Bearing 2 Properties (SSB2)

Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Strength & Modulus
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset$_{norm}$ [ksi]	Ultimate Bearing$_{norm}$ [ksi]
CNA2A111A	A	C1	1	1	119.733	154.331	0.108	20	B1I	0.0054	117.030	150.847
CNA2A113A	A	C1	1	1	112.702	152.865	0.110	20	B1I	0.0055	112.737	152.912
CNA2A115A	A	C1	1	1	119.544	159.919	0.111	20	B1I	0.0055	120.269	160.888
CNA2A116A	A	C1	1	1	118.887	156.652	0.109	20	B1I	0.0054	117.482	154.801
CNA2A211A	A	C2	1	2	113.856	157.674	0.104	20	B1I	0.0052	107.922	149.456
CNA2A212A	A	C2	1	2	111.148	153.515	0.106	20	B1I	0.0053	107.527	148.514
CNA2A213A	A	C2	1	2	121.220	163.345	0.108	20	B1I	0.0054	118.850	160.152
CNA2B111A	B	C1	2	1	111.892	156.280	0.107	20	B1I	0.0053	108.417	151.426
CNA2B112A	B	C1	2	1	115.739	151.404	0.109	20	B1I	0.0055	115.178	150.670
CNA2B113A	B	C1	2	1	106.992	149.248	0.110	20	B1I	0.0055	107.105	149.406
CNA2B114A	B	C1	2	1	113.450	152.764	0.110	20	B1I	0.0055	113.346	152.625
CNA2B211A	B	C2	2	2	120.967	159.606	0.104	20	B1I	0.0052	114.130	150.586
CNA2B212A	B	C2	2	2	116.526	165.359	0.107	20	B1I	0.0053	113.207	160.649
CNA2B213A	B	C2	2	2	117.445	152.835	0.108	20	B1I	0.0054	115.808	150.705
CNA2C111A	C	C1	3	1	113.383	151.684	0.110	20	B1I	0.0055	113.606	151.983
CNA2C112A	C	C1	3	1	111.792	161.662	0.110	20	B1I	0.0055	111.707	161.539
CNA2C114A	C	C1	3	1	118.231	156.455	0.110	20	B1I	0.0055	118.339	156.597
CNA2C115A	C	C1	3	1	117.321	154.815	0.110	20	B1I	0.0055	117.196	154.650
CNA2C211A	C	C2	3	2	126.634	152.553	0.106	20	B1I	0.0053	122.566	147.653
CNA2C212A	C	C2	3	2	111.176	154.385	0.107	20	B1I	0.0053	107.756	149.636
CNA2C214A	C	C2	3	2	117.557	156.726	0.108	20	B1I	0.0054	115.705	154.257
									Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)			
				Average	116.009	155.908			Average	0.005	114.090	153.331
				Standard Dev.	4.488	4.161			Standard Dev.	0.000	4.464	4.320
				Coeff. of Var. [%]	3.868	2.669			Coeff. of Var. [%]$_{norm}$	1.849	3.913	2.818
				Min.	106.992	149.248			Min.	0.005	107.105	147.653
				Max.	126.634	165.359			Max.	0.006	122.566	161.539
				Number of Spec.	21	21			Number of Spec.	21	21	21


Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Laminate Bearing 2% Offset Strength [ksi]


Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
Laminate Bearing Ultimate Strength [ksi]

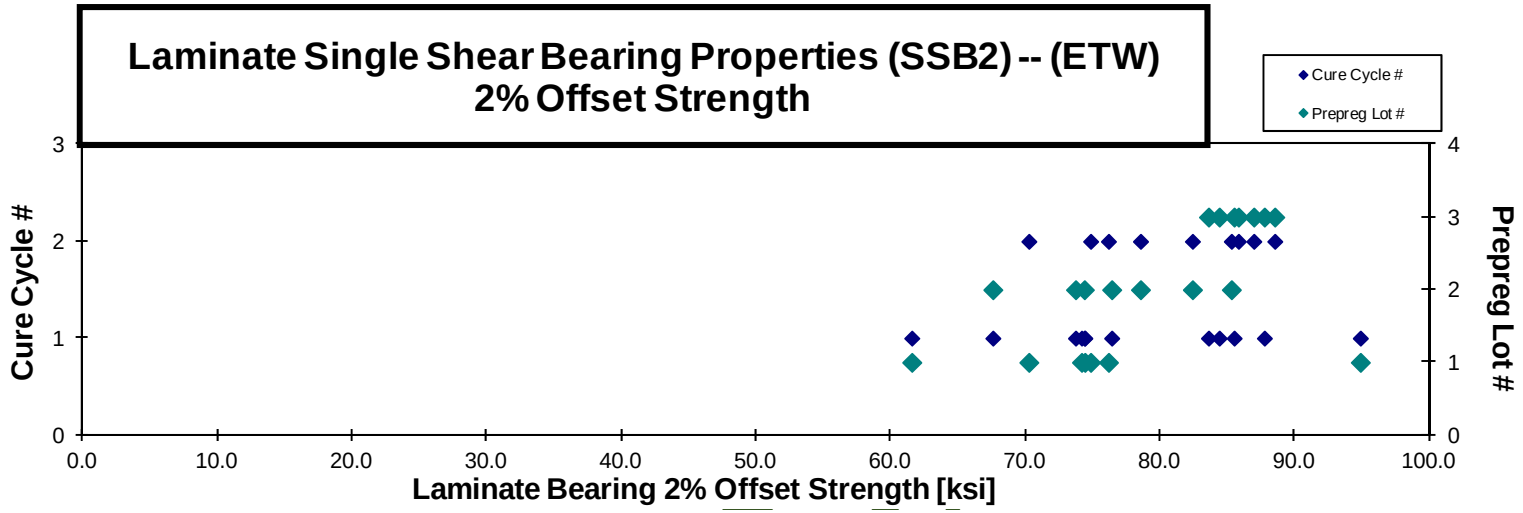
Laminate Single Shear Bearing Properties (SSB2) -- (ETW)
Strength & Modulus
Cytec 5250-5 Uni

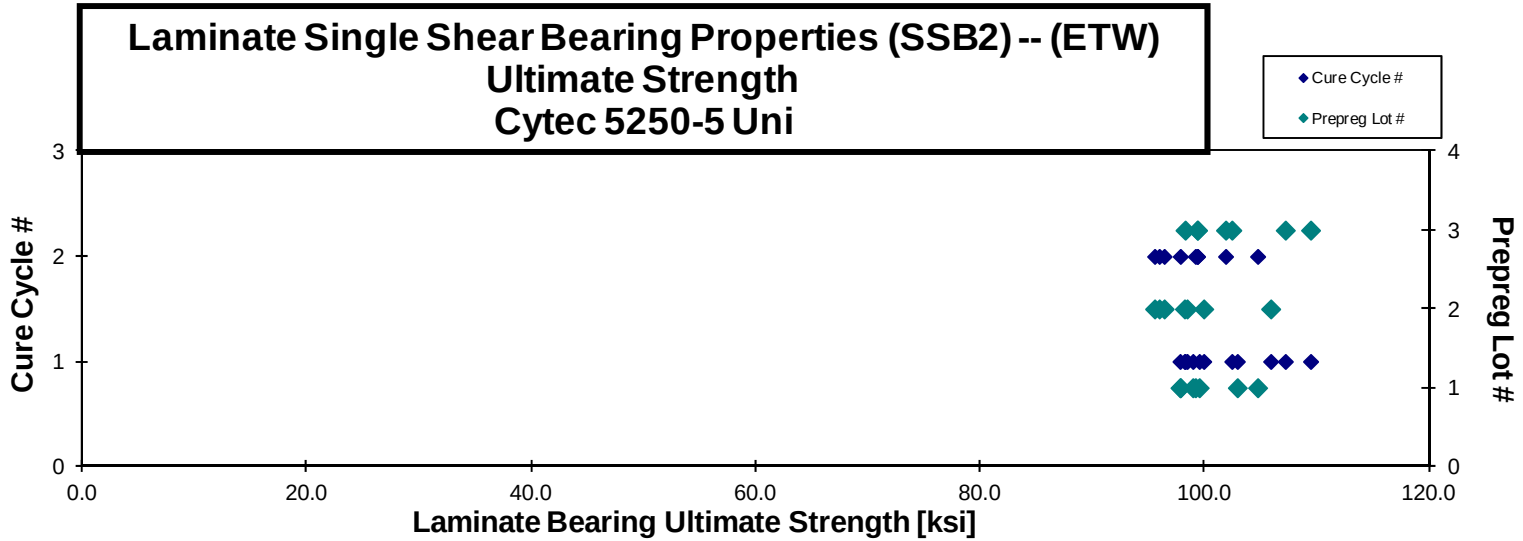
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset$_{norm}$ [ksi]	Ultimate Bearing$_{norm}$ [ksi]
CNA2A117J	A	C1	1	1	94.531	102.517	0.110	20	B1I	0.0055	94.889	102.906
CNA2A118J	A	C1	1	1	73.917	98.256	0.111	20	B1I	0.0055	74.432	98.941
CNA2A119J	A	C1	1	1	74.084	97.665	0.110	20	B1I	0.0055	74.185	97.798
CNA2A11AJ	A	C1	1	1	61.439	99.283	0.110	20	B1I	0.0055	61.579	99.509
CNA2A216J	A	C2	1	2	77.259	108.071	0.107	20	B1I	0.0053	74.859	104.714
CNA2A217J	A	C2	1	2	78.751	101.120	0.106	20	B1I	0.0053	76.185	97.826
CNA2A218J	A	C2	1	2	71.499	100.896	0.108	20	B1I	0.0054	70.274	99.169
CNA2B117J	B	C1	2	1	74.712	98.616	0.110	20	B1I	0.0055	74.395	98.198
CNA2B118J	B	C1	2	1	75.827	105.048	0.111	20	B1I	0.0055	76.424	105.876
CNA2B119J	B	C1	2	1	67.011	97.571	0.111	20	B1I	0.0055	67.600	98.429
CNA2B11AJ	B	C1	2	1	73.327	99.353	0.111	20	B1I	0.0055	73.738	99.910
CNA2B216J	B	C2	2	2	91.595	102.576	0.102	20	B1I	0.0051	85.309	95.536
CNA2B217J	B	C2	2	2	83.081	101.925	0.104	20	B1I	0.0052	78.562	96.381
CNA2B218J	B	C2	2	2	86.234	100.385	0.105	20	B1I	0.0053	82.419	95.943
CNA2C116J	C	C1	3	1	88.220	102.682	0.105	20	B1I	0.0053	84.410	98.248
CNA2C117J	C	C1	3	1	90.211	112.481	0.107	20	B1I	0.0054	87.764	109.430
CNA2C118J	C	C1	3	1	86.527	108.445	0.109	20	B1I	0.0054	85.518	107.180
CNA2C119J	C	C1	3	1	85.070	104.196	0.108	20	B1I	0.0054	83.614	102.412
CNA2C216J	C	C2	3	2	89.306	104.581	0.107	20	B1I	0.0054	86.979	101.856
CNA2C217J	C	C2	3	2	87.191	100.926	0.108	20	B1I	0.0054	85.830	99.351
CNA2C218J	C	C2	3	2	89.676	100.621	0.109	20	B1I	0.0054	88.535	99.341

Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)

Average	**80.927**	**102.248**	**Average**	**0.0054**	**79.405**	**100.426**
Standard Dev.	**8.957**	**3.839**	**Standard Dev.**		**8.081**	**3.754**
Coeff. of Var. [%]	**11.068**	**3.754**	**Coeff. of Var. [%]$_{norm}$**		**10.177**	**3.738**
Min.	**61.439**	**97.571**	**Min.**	**0.0051**	**61.579**	**95.536**
Max.	**94.531**	**112.481**	**Max.**	**0.0055**	**94.889**	**109.430**
Number of Spec.	**21**	**21**	**Number of Spec.**	**21**	**21**	**21**


Laminate Single Shear Bearing Properties (SSB2) -- (ETW)
2% Offset Strength
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing 2% Offset Strength [ksi]
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
0
1
2
3
4


Laminate Single Shear Bearing Properties (SSB2) -- (ETW)
Ultimate Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing Ultimate Strength [ksi]
0.0
20.0
40.0
60.0
80.0
100.0
120.0
0
1
2
3
4

4.30 "50/40/10" Single-Shear Bearing 3 Properties (SSB3)

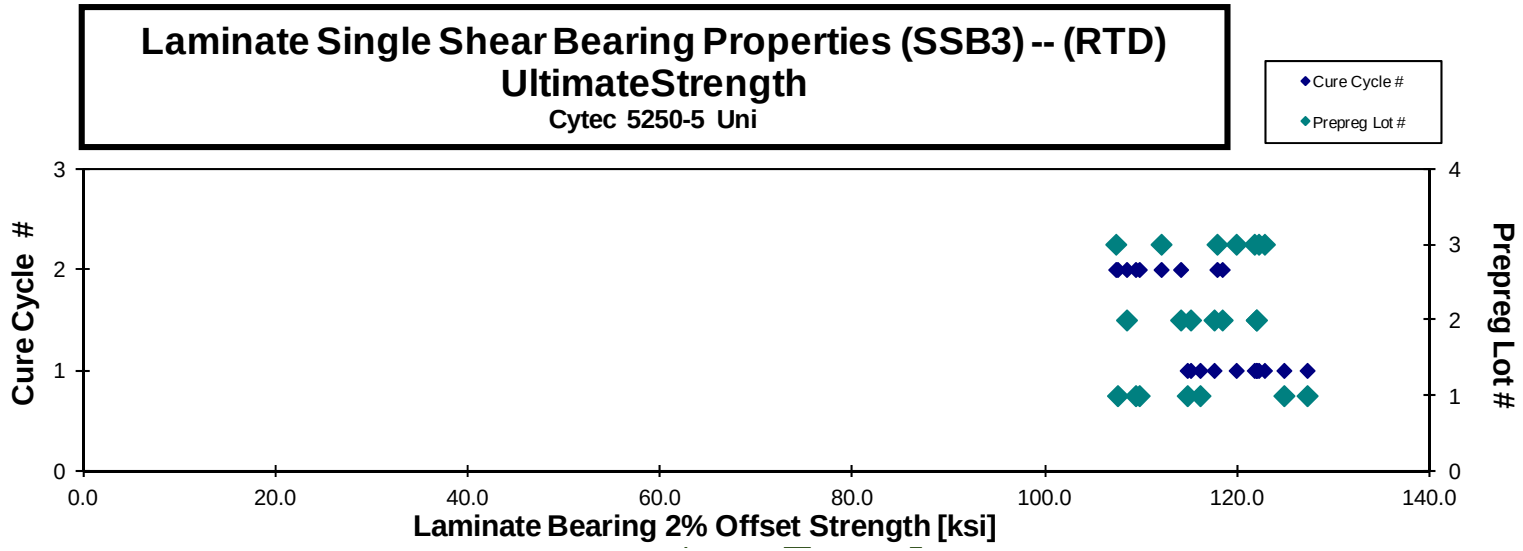
Laminate Single Shear Bearing Properties (SSB3) -- (RTD)
Strength
Cytec 5250-5 Uni

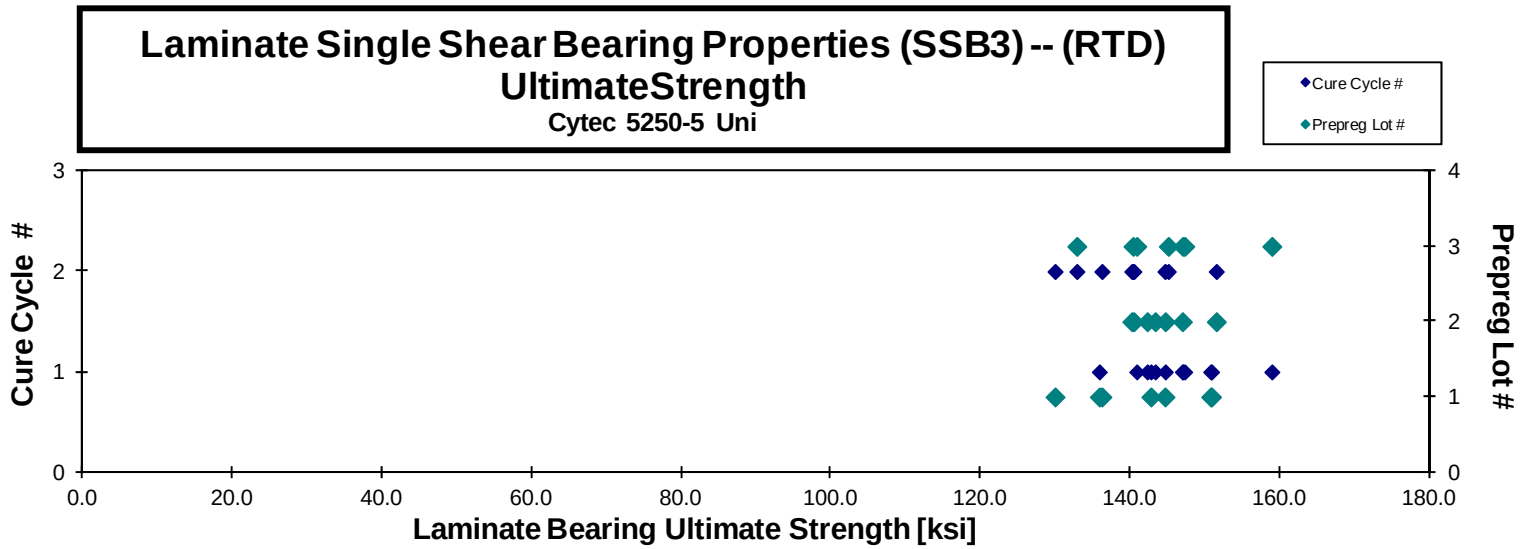
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% $Offset_{norm}$ [ksi]	Ultimate $Bearing_{norm}$ [ksi]
CNA3A111A	A	C1	1	1	114.465	142.330	0.110	20	B1I	0.0055	114.846	142.804
CNA3A112A	A	C1	1	1	115.667	150.246	0.110	20	B1I	0.0055	116.175	150.906
CNA3A113A	A	C1	1	1	125.316	148.441	0.112	20	B1I	0.0056	127.309	150.802
CNA3A114A	A	C1	1	1	123.605	134.507	0.111	20	B1I	0.0056	124.897	135.914
CNA3A211A	A	C2	1	2	113.130	134.327	0.106	20	B1I	0.0053	109.479	129.992
CNA3A212A	A	C2	1	2	109.744	138.974	0.108	20	B1I	0.0054	107.599	136.258
CNA3A213A	A	C2	1	2	110.999	146.193	0.109	20	B1I	0.0054	109.856	144.686
CNA3B111A	B	C1	2	1	118.496	143.352	0.109	20	B1I	0.0055	117.635	142.310
CNA3B112A	B	C1	2	1	122.490	143.929	0.110	20	B1I	0.0055	122.026	143.384
CNA3B113A	B	C1	2	1	121.958	144.646	0.110	20	B1I	0.0055	122.032	144.734
CNA3B114A	B	C1	2	1	115.384	147.268	0.110	20	B1I	0.0055	115.192	147.023
CNA3B212A	B	C2	2	2	125.355	148.398	0.104	20	B1I	0.0052	118.480	140.259
CNA3B213A	B	C2	2	2	120.570	148.406	0.104	20	B1I	0.0052	114.158	140.513
CNA3B215A	B	C2	2	2	113.668	158.713	0.105	20	B1I	0.0053	108.536	151.547
CNA3C111A	C	C1	3	1	123.676	161.390	0.108	20	B1I	0.0054	121.821	158.969
CNA3C112A	C	C1	3	1	124.553	142.839	0.109	20	B1I	0.0054	122.873	140.912
CNA3C113A	C	C1	3	1	121.444	149.178	0.109	20	B1I	0.0054	119.935	147.325
CNA3C114A	C	C1	3	1	124.642	149.912	0.108	20	B1I	0.0054	122.263	147.050
CNA3C212A	C	C2	3	2	109.089	134.974	0.108	20	B1I	0.0054	107.419	132.909
CNA3C213A	C	C2	3	2	114.293	147.933	0.108	20	B1I	0.0054	112.129	145.131
CNA3C214A	C	C2	3	2	118.949	141.622	0.109	20	B1I	0.0055	117.940	140.421

Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)

Average	**118.452**	**145.599**	**Average**	**0.0054**	**116.790**	**143.517**
Standard Dev.	**5.418**	**6.915**	**Standard Dev.**		**5.982**	**6.707**
Coeff. of Var. [%]	**4.574**	**4.750**	**Coeff. of Var. [%]$_{norm}$**		**5.122**	**4.673**
Min.	**109.089**	**134.327**	**Min.**	**0.0052**	**107.419**	**129.992**
Max.	**125.355**	**161.390**	**Max.**	**0.0056**	**127.309**	**158.969**
Number of Spec.	**21**	**21**	**Number of Spec.**	**21**	**21**	**21**


Laminate Single Shear Bearing Properties (SSB3) -- (RTD)
UltimateStrength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Laminate Bearing 2% Offset Strength [ksi]


Laminate Single Shear Bearing Properties (SSB3) -- (RTD)
UltimateStrength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
180.0
Laminate Bearing Ultimate Strength [ksi]

Laminate Single Shear Bearing Properties (SSB3) -- (ETW) Strength

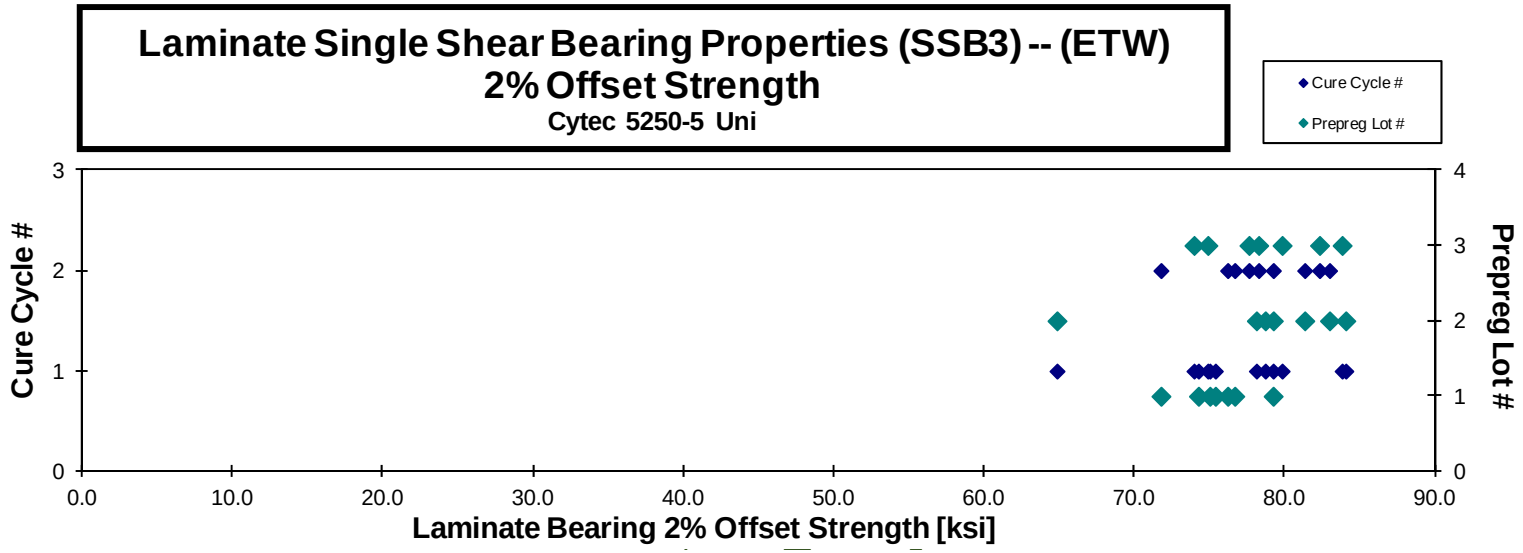
Cytec 5250-5 Uni

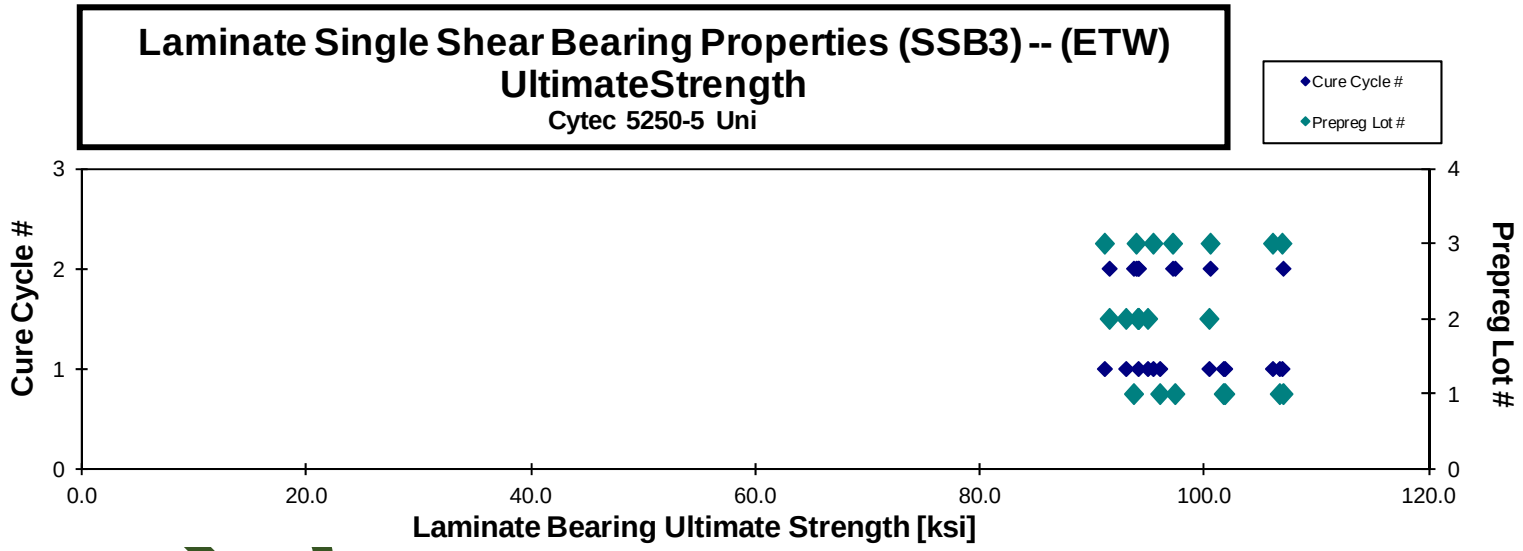
normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset$_{norm}$ [ksi]	Ultimate Bearing$_{norm}$ [ksi]
CNA3A116J	A	C1	1	1	74.876	106.453	0.110	20	B1I	0.0055	75.012	106.647
CNA3A117J	A	C1	1	1	75.422	101.716	0.110	20	B1I	0.0055	75.377	101.655
CNA3A118J	A	C1	1	1	78.524	100.877	0.111	20	B1I	0.0055	79.225	101.778
CNA3A11AJ	A	C1	1	1	74.401	96.178	0.110	20	B1I	0.0055	74.255	95.988
CNA3A216J	A	C2	1	2	75.784	105.740	0.111	20	B1I	0.0056	76.668	106.973
CNA3A217J	A	C2	1	2	74.725	95.456	0.112	20	B1I	0.0056	76.196	97.336
CNA3A218J	A	C2	1	2	70.496	92.007	0.112	20	B1I	0.0056	71.756	93.652
CNA3B117J	B	C1	2	1	80.967	97.642	0.107	20	B1I	0.0053	78.697	94.905
CNA3B118J	B	C1	2	1	80.163	96.531	0.107	20	B1I	0.0054	78.110	94.059
CNA3B119J	B	C1	2	1	66.340	102.692	0.108	20	B1I	0.0054	64.842	100.374
CNA3B11AJ	B	C1	2	1	86.133	95.260	0.107	20	B1I	0.0054	84.058	92.965
CNA3B216J	B	C2	2	2	81.115	96.258	0.107	20	B1I	0.0054	79.235	94.027
CNA3B217J	B	C2	2	2	84.839	93.537	0.108	20	B1I	0.0054	82.975	91.482
CNA3B218J	B	C2	2	2	83.062	96.105	0.108	20	B1I	0.0054	81.325	94.096
CNA3C116J	C	C1	3	1	78.526	101.281	0.104	20	B1I	0.0052	73.958	95.388
CNA3C117J	C	C1	3	1	89.222	113.776	0.103	20	B1I	0.0052	83.815	106.881
CNA3C118J	C	C1	3	1	84.695	112.519	0.104	20	B1I	0.0052	79.819	106.041
CNA3C11AJ	C	C1	3	1	79.505	96.683	0.104	20	B1I	0.0052	74.879	91.058
CNA3C216J	C	C2	3	2	81.559	101.230	0.106	20	B1I	0.0053	78.259	97.135
CNA3C217J	C	C2	3	2	79.892	96.630	0.107	20	B1I	0.0053	77.616	93.878
CNA3C218J	C	C2	3	2	84.949	103.700	0.107	20	B1I	0.0053	82.310	100.479

Ultimate Bearing Strength / B1I: B:Bearing, 1:first hole, I: Inapplicable (not on bolt, nut or head side)

Average	**79.295**	**100.108**		**Average**	**0.0054**	**77.542**	**97.943**
Standard Dev.	**5.486**	**5.836**		**Standard Dev.**		**4.475**	**5.283**
Coeff. of Var. [%]	**6.918**	**5.830**		**Coeff. of Var. [%]$_{norm}$**		**5.772**	**5.394**
Min.	**66.340**	**92.007**		**Min.**	**0.0052**	**64.842**	**91.058**
Max.	**89.222**	**113.776**		**Max.**	**0.0056**	**84.058**	**106.973**
Number of Spec.	**21**	**21**		**Number of Spec.**	**21**	**21**	**21**


Laminate Single Shear Bearing Properties (SSB3) -- (ETW)
2% Offset Strength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
Laminate Bearing 2% Offset Strength [ksi]


Laminate Single Shear Bearing Properties (SSB3) -- (ETW)
UltimateStrength
Cytec 5250-5 Uni
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
20.0
40.0
60.0
80.0
100.0
120.0
Laminate Bearing Ultimate Strength [ksi]

4.31 Compression After Impact 1 Properties (CAI1)

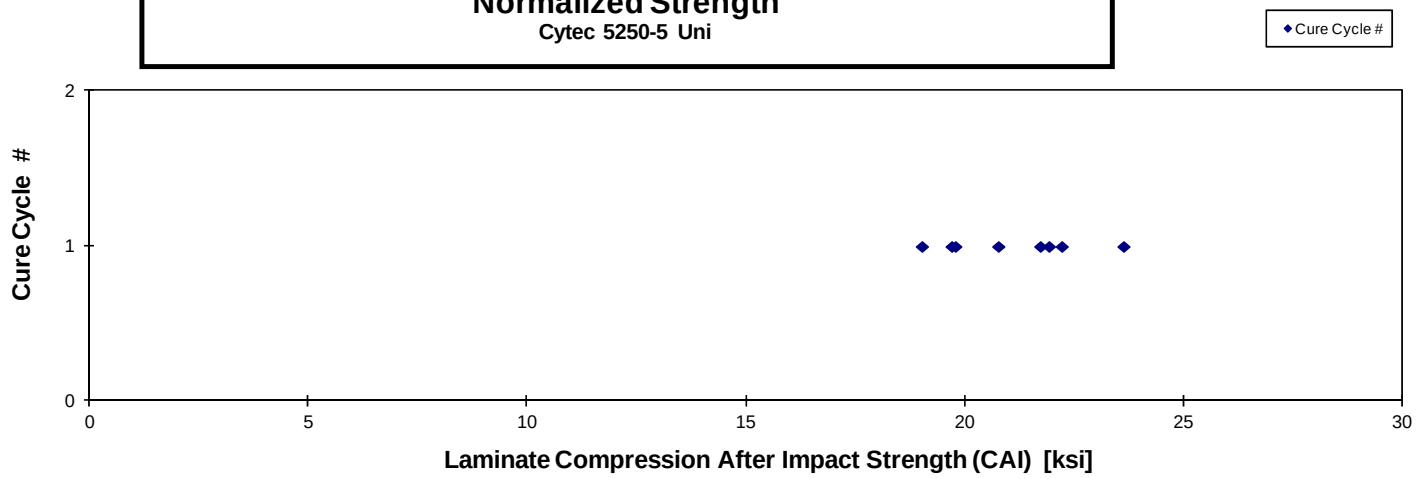
Laminate Compression After Impact Properties (CAI) -- (RTD)
Strength
Cytec 5250-5 Uni

normalizing t_{ply} [in]: 0.0055

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Measured Impact Energy (in-lbf)	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]
CNAKA111A	A	C1	1	1	266.60	21.739	0.178	32	LDM	0.0055	21.931
CNAKA112A	A	C1	1	1	269.62	20.303	0.180	32	LDM	0.0056	20.773
CNAKA113A	A	C1	1	1	270.59	19.285	0.180	32	LDM	0.0056	19.705
CNAKA114A	A	C1	1	1	265.73	18.969	0.177	32	LDM	0.0055	19.025
CNAKA115A	A	C1	1	1	268.25	21.428	0.179	32	LDM	0.0056	21.732
CNAKA116A	A	C1	1	1	271.96	21.641	0.181	32	LDM	0.0056	22.223
CNAKA117A	A	C1	1	1	272.26	23.030	0.181	32	LDM	0.0056	23.634
CNAKA118A	A	C1	1	1	267.73	19.556	0.178	32	LDM	0.0056	19.790

Average	20.744		$Average_{norm}$	0.0056	21.101
Standard Dev.	1.433		$Standard\ Dev._{norm}$		1.551
Coeff. of Var. [%]	6.907		$Coeff.\ of\ Var.\ [\%]_{norm}$		7.352
Min.	18.969		Min.	0.0055	19.025
Max.	23.030		Max.	0.0056	23.634
Number of Spec.	8		Number of Spec.		8

Laminate Compression After Impact Properties (CAI) -- (RTD)
Normalized Strength
Cytec 5250-5 Uni



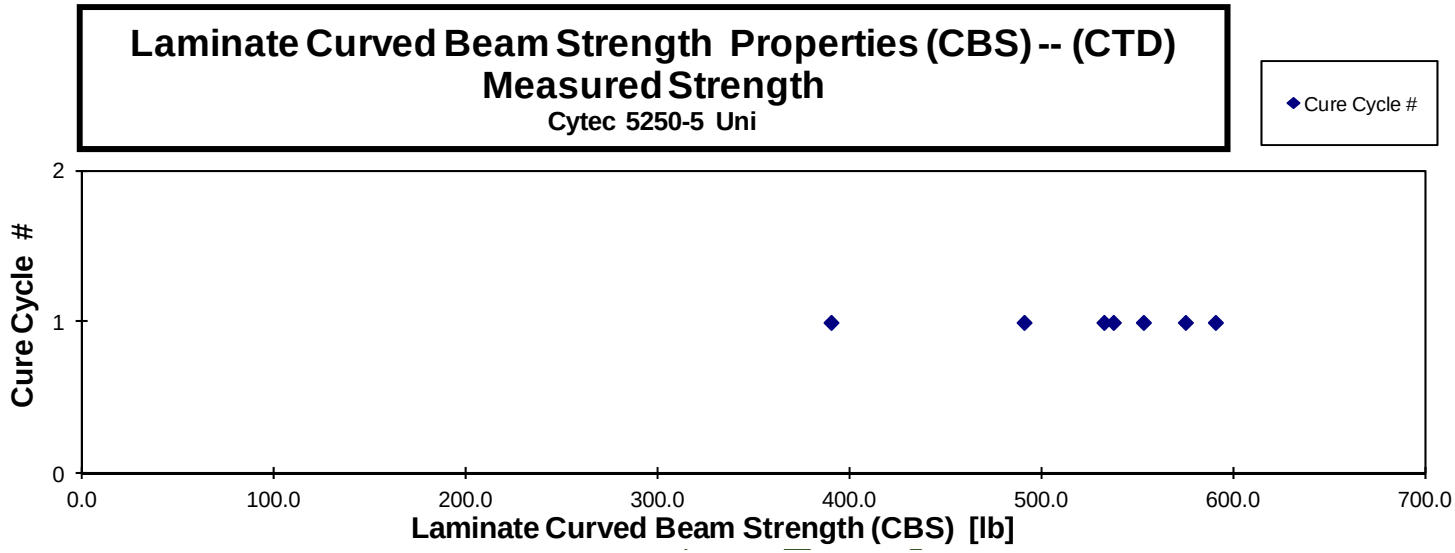
4.32 Interlaminar Tension Properties (ILT)

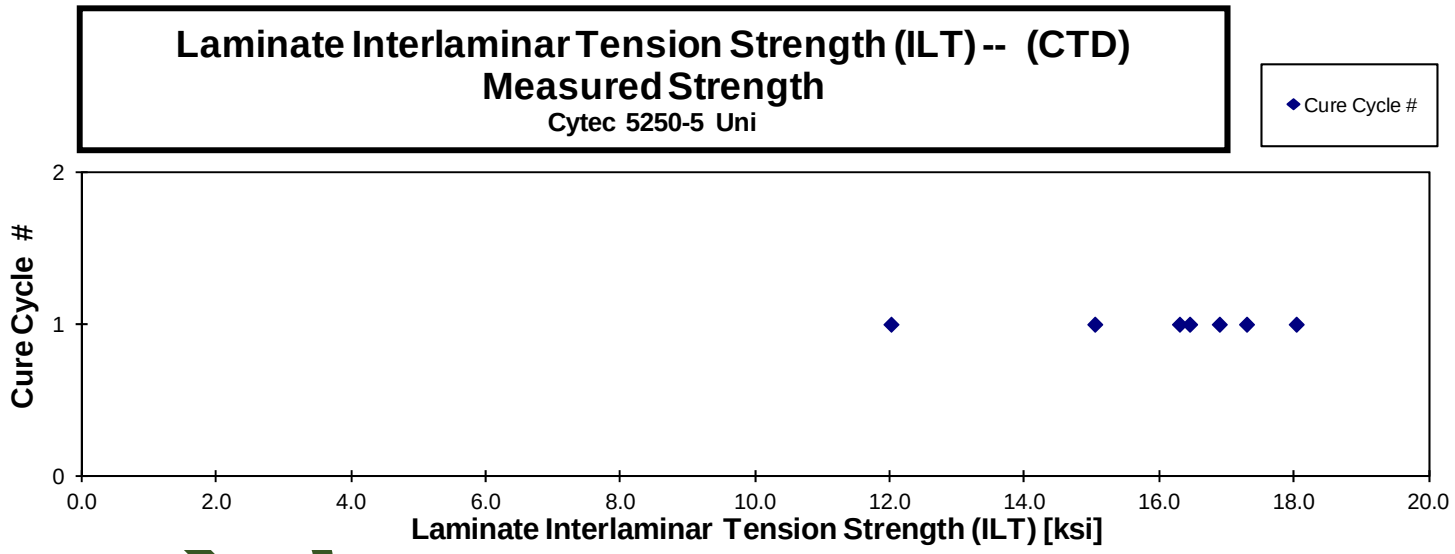
Laminate Curved Beam Strength Properties (ILT) -- (CTD) Strength
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Curved Beam Strength [lb]	Interlaminar Tension Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate
CNAMA118B	A	C1	1	1	574.840	17.290	0.156	30
CNAMA119B	A	C1	1	1	537.275	16.293	0.155	30
CNAMA11AB	A	C1	1	1	390.165	12.009	0.153	30
CNAMA11BB	A	C1	1	1	590.471	18.027	0.155	30
CNAMA11CB	A	C1	1	1	532.394	16.444	0.153	30
CNAMA11DB	A	C1	1	1	490.779	15.036	0.154	30
CNAMA11EB	A	C1	1	1	552.960	16.885	0.154	30

Basis values are not calcuated on ILT/CBS due to variation in processing

Average	**524.126**	**15.998**
Standard Dev.	**67.211**	**1.987**
Coeff. of Var. [%]	**12.823**	**12.423**
Min.	**390.165**	**12.009**
Max.	**590.471**	**18.027**
Number of Spec.	**7**	**7**


Laminate Curved Beam Strength Properties (CBS) -- (CTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
2
1
0
0.0
100.0
200.0
300.0
400.0
500.0
600.0
700.0
Laminate Curved Beam Strength (CBS) [lb]


Laminate Interlaminar Tension Strength (ILT) -- (CTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
2
1
0
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
Laminate Interlaminar Tension Strength (ILT) [ksi]

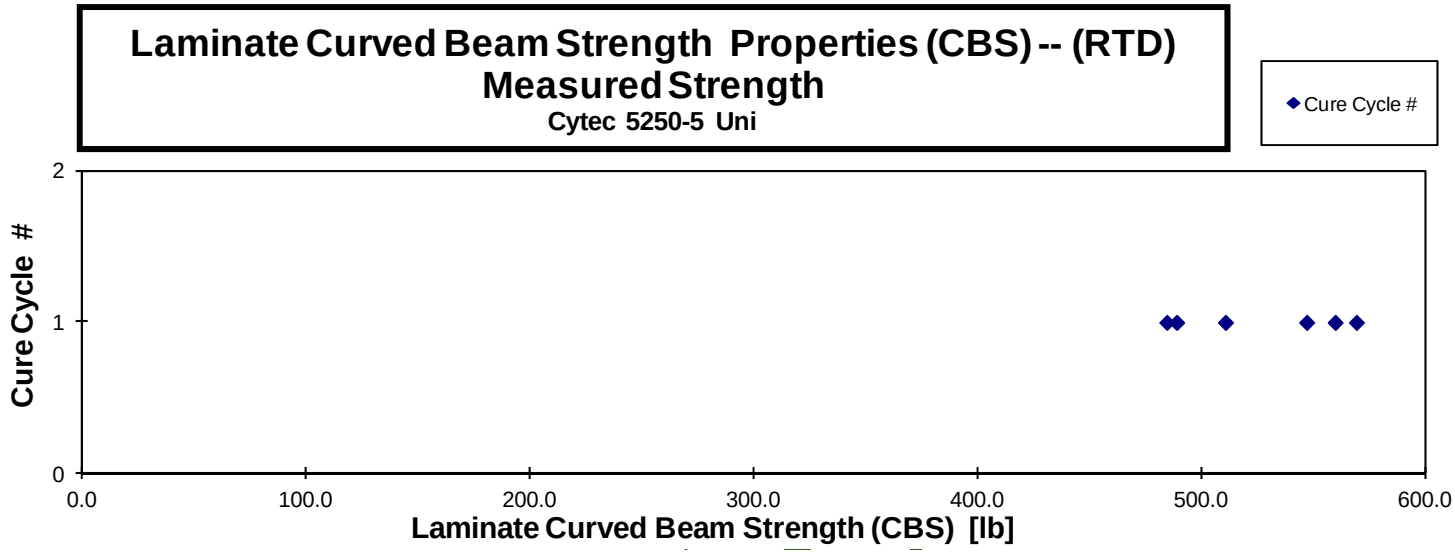
Laminate Curved Beam Strength Properties (ILT) -- (RTD) Strength

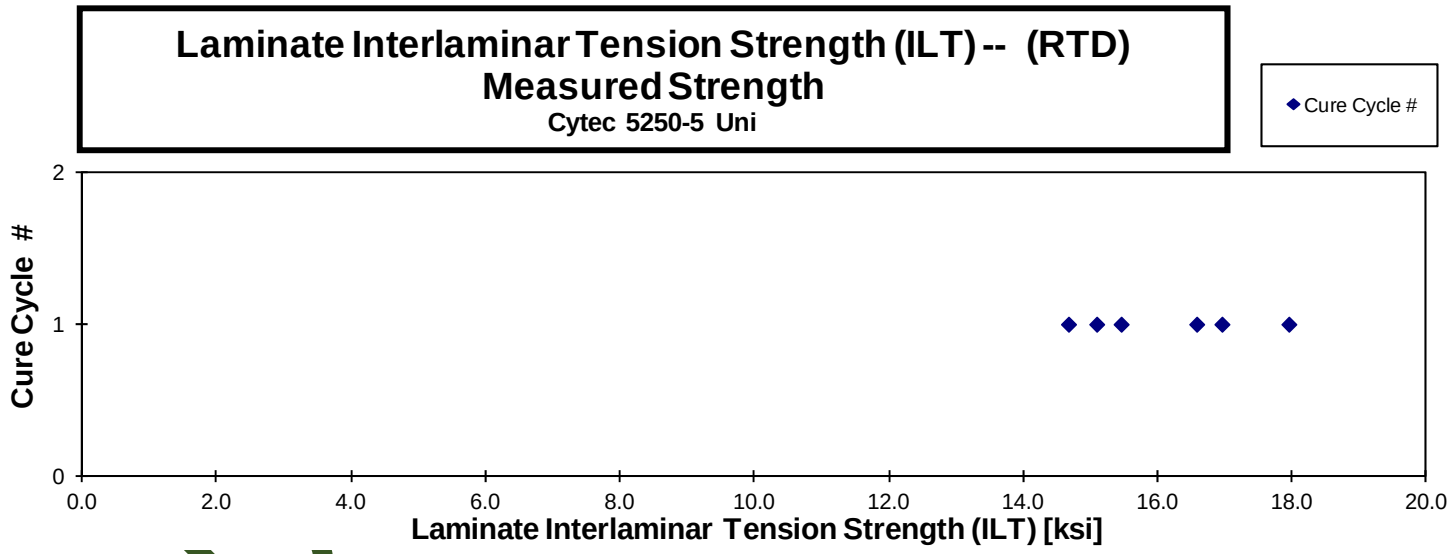
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Curved Beam Strength [lb]	Interlaminar Tension Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate
CNAMA111A	A	C1	1	1	488.818	14.669	0.157	30
CNAMA112A	A	C1	1	1	484.434	15.089	0.152	30
CNAMA113A	A	C1	1	1	559.634	16.952	0.156	30
CNAMA114A	A	C1	1	1	546.921	16.576	0.155	30
CNAMA115A	A	C1	1	1	569.123	17.948	0.150	30
CNAMA116A	A	C1	1	1	510.623	15.452	0.156	30

Basis values are not calcuated on ILT/CBS due to variation in processing

Average	**526.592**	**16.114**
Standard Dev.	**36.805**	**1.253**
Coeff. of Var. [%]	**6.989**	**7.778**
Min.	**484.434**	**14.669**
Max.	**569.123**	**17.948**
Number of Spec.	**6**	**6**


Laminate Curved Beam Strength Properties (CBS) -- (RTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
2
1
0
0.0
100.0
200.0
300.0
400.0
500.0
600.0
Laminate Curved Beam Strength (CBS) [lb]


Laminate Interlaminar Tension Strength (ILT) -- (RTD)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
2
1
0
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
Laminate Interlaminar Tension Strength (ILT) [ksi]

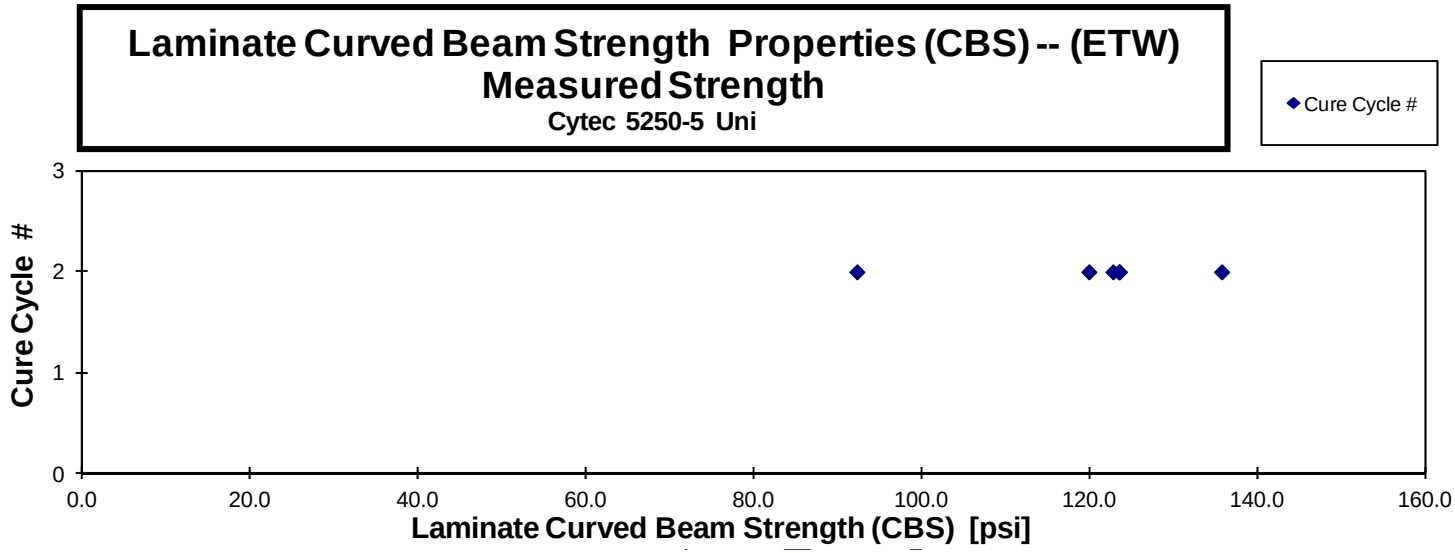
Laminate Curved Beam Strength Properties (ILT) -- (ETW) Strength

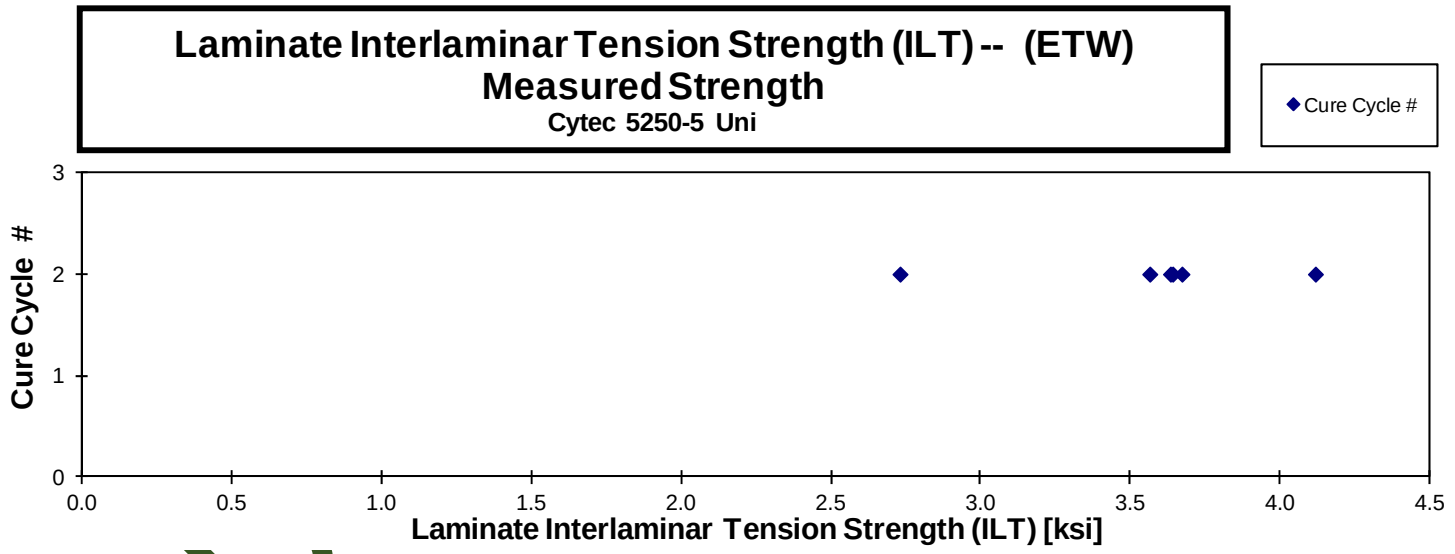
Cytec 5250-5 Uni

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Curved Beam Strength [lb]	Interlaminar Tension Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate
CNAMA212J	A	C2	1	2	135.712	4.116	0.155	30
CNAMA213J	A	C2	1	2	122.762	3.671	0.157	30
CNAMA214J	A	C2	1	2	119.897	3.563	0.158	30
CNAMA216J	A	C2	1	2	123.467	3.640	0.159	30
CNAMA217J	A	C2	1	2	92.263	2.730	0.159	30
CNAMA218J	A	C2	1	2	123.538	3.632	0.159	30

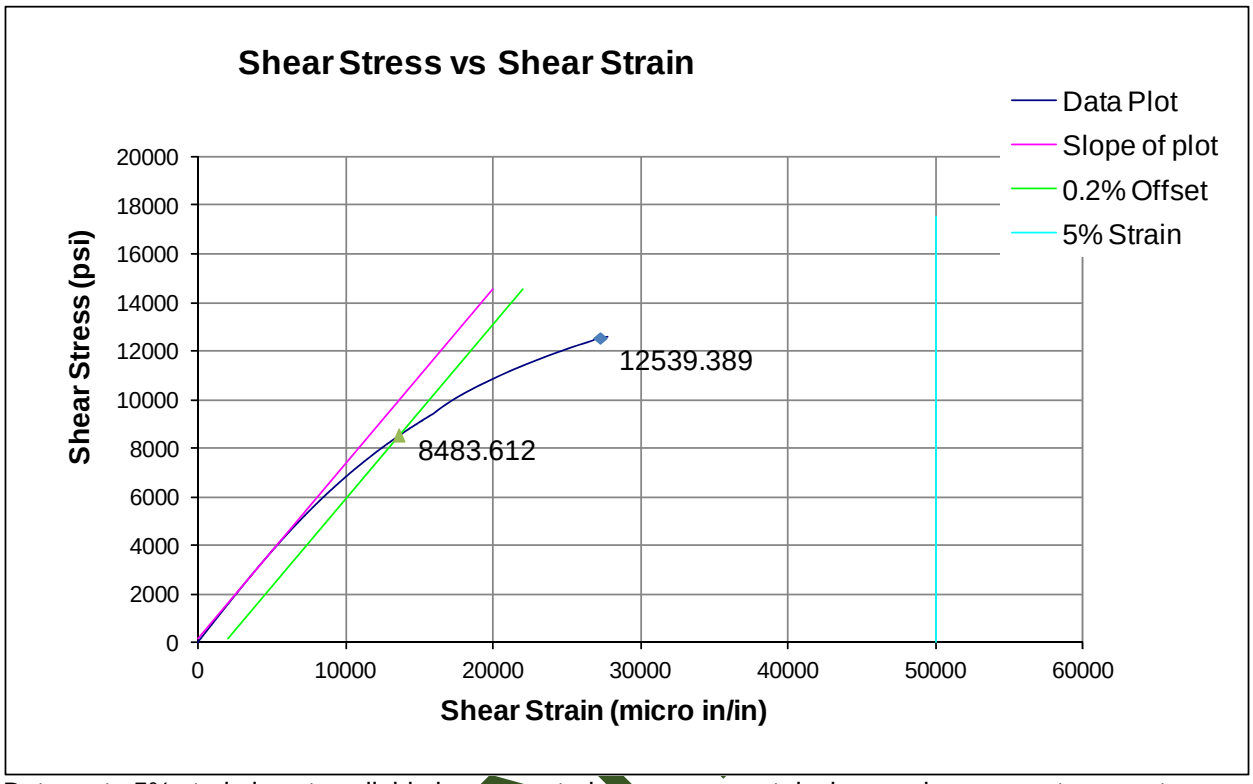
Basis values are not calcuated on ILT/CBS due to variation in processing

Average	**119.606**	**3.559**
Standard Dev.	**14.474**	**0.452**
Coeff. of Var. [%]	**12.101**	**12.709**
Min.	**92.263**	**2.730**
Max.	**135.712**	**4.116**
Number of Spec.	**6**	**6**


Laminate Curved Beam Strength Properties (CBS) -- (ETW)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
0
1
2
3
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
Laminate Curved Beam Strength (CBS) [psi]


Laminate Interlaminar Tension Strength (ILT) -- (ETW)
Measured Strength
Cytec 5250-5 Uni
Cure Cycle #
Cure Cycle #
0
1
2
3
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Laminate Interlaminar Tension Strength (ILT) [ksi]

5. Shear Stress vs. Shear Strain, RTD



Data up to 5% strain is not available because strain measurement device used was an extensometer, which was removed prior to 5% strain.

6. Fluid Sensitivity Comparison

Fluid	Average Short Beam Strength With Fluid (ksi)	Same Environment Short Beam Strength Without Fluid (ksi) (RTD)	Worst Case Environment Short Beam Strength (ksi) (RTW)	% Strength Reduction With Respect to RTD (no fluid)
a	14.308	16.303	14.036	12.237
b	14.707	16.303	14.036	9.793
c	15.907	16.303	14.036	2.431
d	15.929	16.303	14.036	2.293
e	15.481	16.303	14.036	5.046
f	15.846	16.303	14.036	2.805
g	14.456	16.303	14.036	11.329
h	15.430	16.303	14.036	5.358
i	14.071	16.303	14.036	13.692
j	16.184	16.303	14.036	0.729
k	15.841	16.303	14.036	2.837
l	16.523	16.303	14.036	-1.349
r	13.866	16.303	14.036	14.948
A	16.303	16.303	14.036	0.000
t	14.036	16.303	14.036	13.907

	Fluid	Exposure
a	100 Low lead Fuel	90 days min @ 70°F ± 10F
b	Jet A Fuel	
c	Mil-H-5606 Hydraulic Oil	
d	Mil-H-83282 Hydraulic Oil	
e	Engine Lube Oil Mil-L-7808	
f	Engine Lube Oil Mil-L-23699	
g	Salt Water	
h	Skydrol LD-4	
i	50% Water w/ 50% Skydrol	
r	Distilled Water	
j	MEK washing fluid	90 mins @ 70°F ± 10F
k	Polypropylene Glycol Deicer	
l	Isopropyl Alcohol Deicing	48±4 hrs @ 70°F ± 10F
A	Dry	Per section 6.1 Test Plan
t	85% Relative Humidity	

	Fluid	Exposure
1	100 Low lead Fuel	90 days min @ 70°F ± 10F
2	Jet A Fuel	
3	Mil-H-5606 Hydraulic Oil	
4	Mil-H-83282 Hydraulic Oil	
5	Engine Lube Oil Mil-L-7808	
6	Engine Lube Oil Mil-L-23699	
7	Salt Water	
8	Skydrol LD-4	
9	50% Water w/ 50% Skydrol	
s	Distilled Water	
m	MEK washing fluid	90 mins @ 70°F ± 10F
n	Polypropylene Glycol Deicer	
p	Isopropyl Alcohol Deicing	48±4 hrs @ 70°F ± 10F
K	Dry	Per section 6.1 Test Plan
J	85% Relative Humidity	

Fluid	Average Interlaminar Shear Strength With Fluid (ksi)	Same Environment Interlaminar Shear Strength Without Fluid (ksi) (ETD)	Worst Case Environment Interlaminar Shear Strength (ksi) (ETW2)	% Strength Reduction With Respect to ETD (no fluid)
1	9.218	9.549	5.935	3.467
2	8.424	9.549	5.935	11.782
3	8.960	9.549	5.935	6.167
4	9.525	9.549	5.935	0.252
5	9.084	9.549	5.935	4.870
6	9.488	9.549	5.935	0.642
7	6.866	9.549	5.935	28.103
8	9.434	9.549	5.935	1.202
9	6.904	9.549	5.935	27.698
m	9.380	9.549	5.935	1.775
n	9.520	9.549	5.935	0.306
p	9.857	9.549	5.935	-3.227
s	7.123	9.549	5.935	25.412
K	9.549	9.549	5.935	0.000
J	5.935	9.549	5.935	37.849

Fluid Sensitivity Screening
Short Beam Strength Properties (SBS) -- (RT) Strength
Cytec 5250-5 Unidirectional

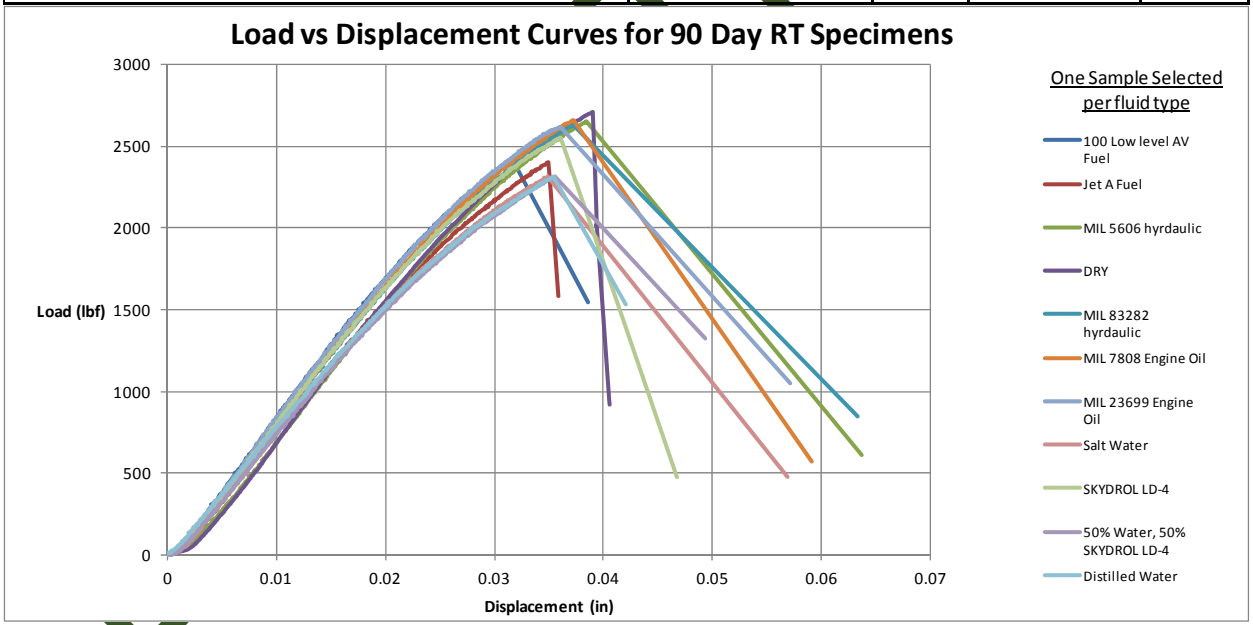
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Fluid	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode	AVERAGE
CNAQA121a	A	C1	1	a	13.861	0.250	45	0.0055	Interlaminar Shear	
CNAQA122a	A	C1	1	a	14.549	0.249	45	0.0055	Interlaminar Shear	
CNAQA123a	A	C1	1	a	14.701	0.250	45	0.0055	Interlaminar Shear	14.308
CNAQA124a	A	C1	1	a	14.025	0.250	45	0.0056	Interlaminar Shear	
CNAQA125a	A	C1	1	a	14.581	0.250	45	0.0056	Interlaminar Shear	
CNAQA126a	A	C1	1	a	14.133	0.249	45	0.0055	Interlaminar Shear	
CNAQA12Db	A	C1	1	b	14.662	0.245	45	0.0054	Interlaminar Shear	
CNAQA12Eb	A	C1	1	b	14.704	0.245	45	0.0054	Interlaminar Shear	14.707
CNAQA12Fb	A	C1	1	b	14.835	0.246	45	0.0055	Interlaminar Shear	
CNAQA12Gb	A	C1	1	b	14.839	0.247	45	0.0055	Interlaminar Shear	
CNAQA12Hb	A	C1	1	b	14.617	0.248	45	0.0055	Interlaminar Shear	
CNAQA12Ib	A	C1	1	b	14.583	0.249	45	0.0055	Interlaminar Shear	
CNAQA131c	A	C1	1	c	16.062	0.247	45	0.0055	Interlaminar Shear	
CNAQA132c	A	C1	1	c	15.485	0.247	45	0.0055	Interlaminar Shear	
CNAQA133c	A	C1	1	c	16.109	0.246	45	0.0055	Interlaminar Shear	15.907
CNAQA134c	A	C1	1	c	15.987	0.246	45	0.0055	Interlaminar Shear	
CNAQA135c	A	C1	1	c	15.712	0.245	45	0.0055	Interlaminar Shear	
CNAQA136c	A	C1	1	c	16.086	0.246	45	0.0055	Interlaminar Shear	
CNAQA13Dd	A	C1	1	d	15.849	0.245	45	0.0054	Interlaminar Shear	
CNAQA13Ed	A	C1	1	d	16.016	0.247	45	0.0055	Interlaminar Shear	
CNAQA13Fd	A	C1	1	d	16.018	0.246	45	0.0055	Interlaminar Shear	
CNAQA13Gd	A	C1	1	d	15.940	0.248	45	0.0055	Interlaminar Shear	15.929
CNAQA13Hd	A	C1	1	d	15.984	0.249	45	0.0055	Interlaminar Shear	
CNAQA13Id	A	C1	1	d	15.768	0.249	45	0.0055	Interlaminar Shear	
CNAQA141e	A	C1	1	e	16.041	0.248	45	0.0055	Interlaminar Shear	
CNAQA142e	A	C1	1	e	15.776	0.247	45	0.0055	Interlaminar Shear	
CNAQA143e	A	C1	1	e	16.091	0.246	45	0.0055	Interlaminar Shear	15.481
CNAQA144e	A	C1	1	e	14.178	0.246	45	0.0055	Interlaminar Shear	
CNAQA145e	A	C1	1	e	15.317	0.246	45	0.0055	Interlaminar Shear	
CNAQA14Df	A	C1	1	f	15.715	0.247	45	0.0055	Interlaminar Shear	
CNAQA14Ef	A	C1	1	f	15.882	0.247	45	0.0055	Interlaminar Shear	
CNAQA14Ff	A	C1	1	f	15.783	0.247	45	0.0055	Interlaminar Shear	15.846
CNAQA14Gf	A	C1	1	f	15.611	0.245	45	0.0055	Interlaminar Shear	
CNAQA14Hf	A	C1	1	f	16.092	0.245	45	0.0054	Interlaminar Shear	
CNAQA14If	A	C1	1	f	15.892	0.243	45	0.0054	Interlaminar Shear	
CNAQA151g	A	C1	1	g	14.385	0.241	45	0.0054	Interlaminar Shear	
CNAQA152g	A	C1	1	g	14.614	0.244	45	0.0054	Interlaminar Shear	
CNAQA153g	A	C1	1	g	14.625	0.244	45	0.0054	Interlaminar Shear	14.456
CNAQA154g	A	C1	1	g	14.440	0.244	45	0.0054	Interlaminar Shear	
CNAQA155g	A	C1	1	g	14.308	0.244	45	0.0054	Interlaminar Shear	
CNAQA156g	A	C1	1	g	14.366	0.245	45	0.0054	Interlaminar Shear	
CNAQA15Dh	A	C1	1	h	15.518	0.246	45	0.0055	Interlaminar Shear	
CNAQA15Eh	A	C1	1	h	15.457	0.247	45	0.0055	Interlaminar Shear	
CNAQA15Fh	A	C1	1	h	15.620	0.245	45	0.0054	Interlaminar Shear	15.430
CNAQA15Gh	A	C1	1	h	15.375	0.244	45	0.0054	Interlaminar Shear	
CNAQA15Hh	A	C1	1	h	15.453	0.249	45	0.0055	Interlaminar Shear	
CNAQA15Ih	A	C1	1	h	15.154	0.248	45	0.0055	Interlaminar Shear	
CNAQB161i	B	C1	1	i	14.029	0.247	45	0.0055	Interlaminar Shear	
CNAQB162i	B	C1	1	i	13.951	0.248	45	0.0055	Interlaminar Shear	
CNAQB163i	B	C1	1	i	14.231	0.246	45	0.0055	Interlaminar Shear	14.071
CNAQB164i	B	C1	1	i	13.913	0.247	45	0.0055	Interlaminar Shear	
CNAQB165i	B	C1	1	i	14.263	0.246	45	0.0055	Interlaminar Shear	
CNAQB166i	B	C1	1	i	14.039	0.249	45	0.0055	Interlaminar Shear	

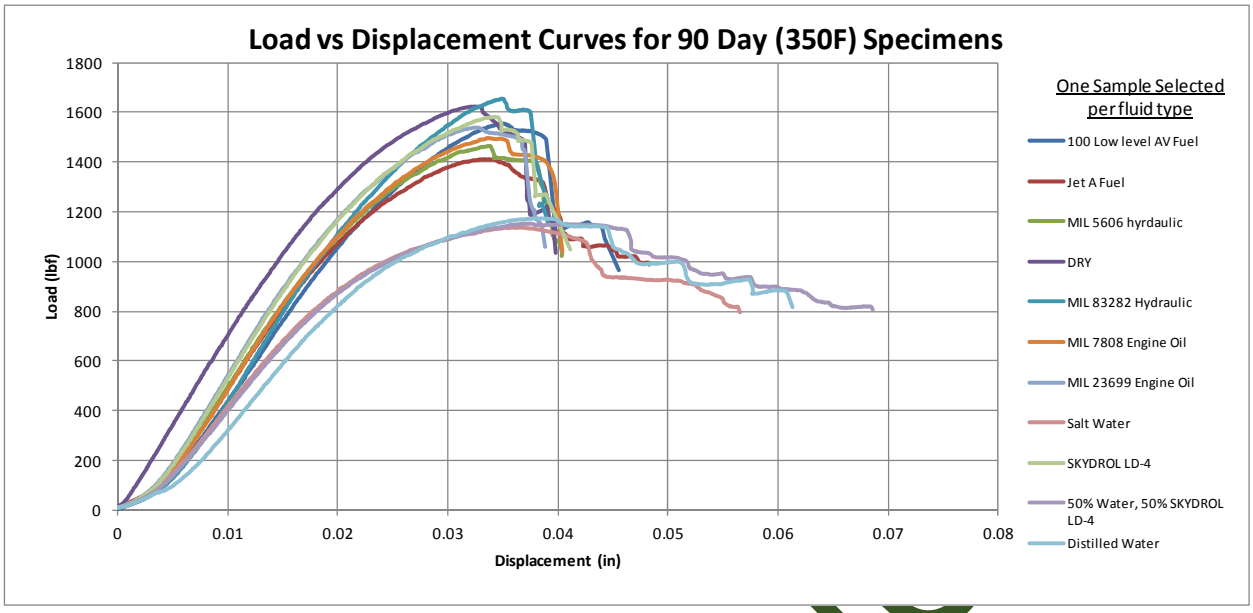
CNAQB16Dj	B	C1	1	j	16.169	0.250	45	0.0055	Interlaminar Shear	
CNAQB16Ej	B	C1	1	j	16.321	0.248	45	0.0055	Interlaminar Shear	
CNAQB16Fj	B	C1	1	j	16.340	0.248	45	0.0055	Interlaminar Shear	16.184
CNAQB16Gj	B	C1	1	j	16.115	0.248	45	0.0055	Interlaminar Shear	
CNAQB16Hj	B	C1	1	j	16.028	0.248	45	0.0055	Interlaminar Shear	
CNAQB16Ij	B	C1	1	j	16.135	0.248	45	0.0055	Interlaminar Shear	
CNAQB171k	B	C1	1	k	15.961	0.249	45	0.0055	Interlaminar Shear	
CNAQB172k	B	C1	1	k	15.386	0.245	45	0.0055	Interlaminar Shear	
CNAQB173k	B	C1	1	k	16.071	0.249	45	0.0055	Interlaminar Shear	15.841
CNAQB174k	B	C1	1	k	15.831	0.250	45	0.0056	Interlaminar Shear	
CNAQB175k	B	C1	1	k	15.806	0.246	45	0.0055	Interlaminar Shear	
CNAQB176k	B	C1	1	k	15.989	0.248	45	0.0055	Interlaminar Shear	
CNAQB17Dl	B	C1	1	l	16.458	0.247	45	0.0055	Interlaminar Shear	
CNAQB17El	B	C1	1	l	16.369	0.248	45	0.0055	Interlaminar Shear	
CNAQB17Fl	B	C1	1	l	16.451	0.248	45	0.0055	Interlaminar Shear	16.523
CNAQB17Gl	B	C1	1	l	16.634	0.249	45	0.0055	Interlaminar Shear	
CNAQB17Hl	B	C1	1	l	16.612	0.249	45	0.0055	Interlaminar Shear	
CNAQB17Il	B	C1	1	l	16.614	0.248	45	0.0055	Interlaminar Shear	
CNAQB181r	B	C1	1	r	13.235	0.248	45	0.0055	Interlaminar Shear	
CNAQB182r	B	C1	1	r	14.016	0.248	45	0.0055	Interlaminar Shear	
CNAQB183r	B	C1	1	r	13.934	0.248	45	0.0055	Interlaminar Shear	13.866
CNAQB184r	B	C1	1	r	13.940	0.248	45	0.0055	Interlaminar Shear	
CNAQB185r	B	C1	1	r	14.105	0.243	45	0.0054	Interlaminar Shear	
CNAQB186r	B	C1	1	r	13.966	0.243	45	0.0054	Interlaminar Shear	
CNAQB18DA	B	C1	1	A	16.470	0.246	45	0.0055	Interlaminar Shear	
CNAQB18EA	B	C1	1	A	16.276	0.245	45	0.0055	Interlaminar Shear	
CNAQB18FA	B	C1	1	A	16.299	0.245	45	0.0054	Interlaminar Shear	16.303
CNAQB18GA	B	C1	1	A	16.158	0.245	45	0.0054	Interlaminar Shear	
CNAQB18HA	B	C1	1	A	16.319	0.245	45	0.0054	Interlaminar Shear	
CNAQB18IA	B	C1	1	A	16.297	0.245	45	0.0054	Interlaminar Shear	
CNAQB191t	B	C1	1	t	14.333	0.247	45	0.0055	Interlaminar Shear	
CNAQB192t	B	C1	1	t	14.131	0.245	45	0.0055	Interlaminar Shear	
CNAQB193t	B	C1	1	t	14.220	0.245	45	0.0054	Interlaminar Shear	14.036
CNAQB194t	B	C1	1	t	13.473	0.245	45	0.0054	Interlaminar Shear	
CNAQB195t	B	C1	1	t	13.988	0.246	45	0.0055	Interlaminar Shear	
CNAQB196t	B	C1	1	t	14.070	0.248	45	0.0055	Interlaminar Shear	

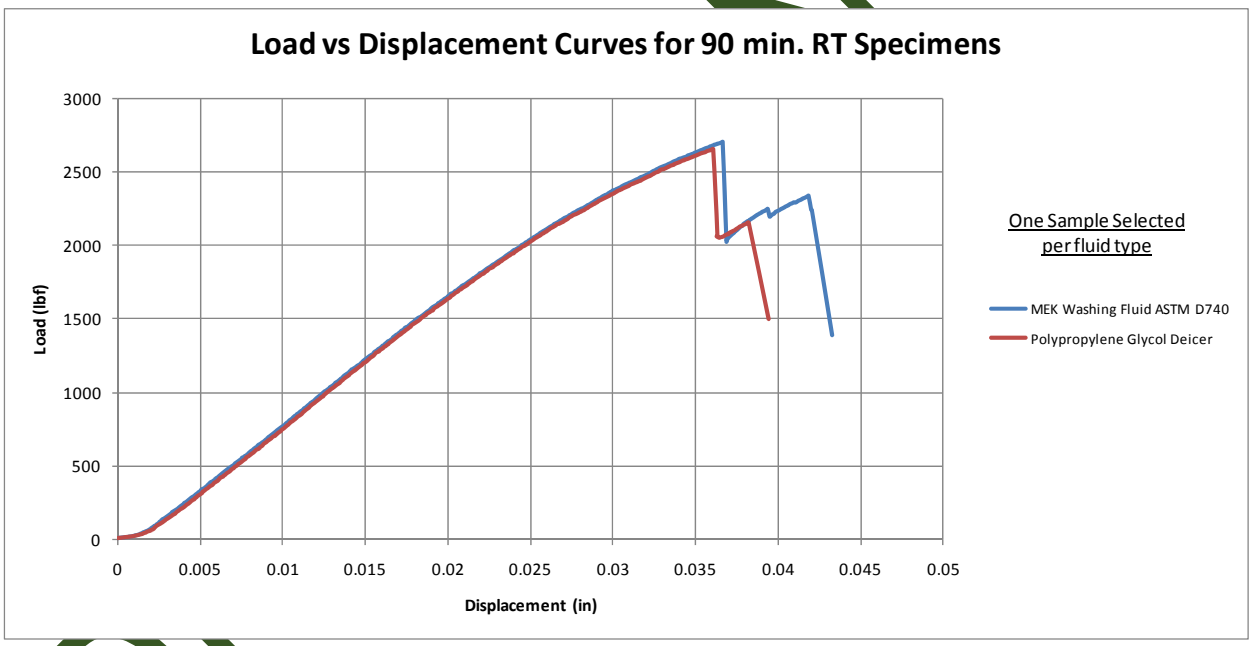
Fluid Sensitivity Screening
Short Beam Strength Properties (SBS) -- (350F) Strength
Cytec 5250-5 Unidirectional

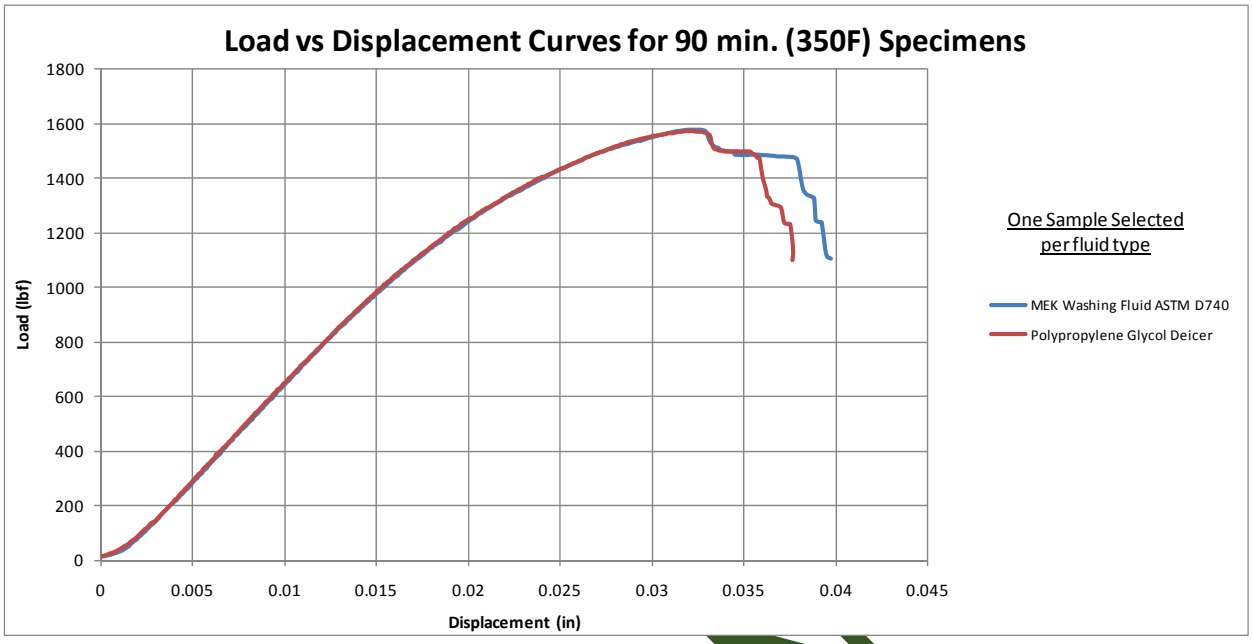
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Fluid	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode	AVERAGE
CNAQA1271	A	C1	1	1	9.347	0.249	45	0.0055	Interlaminar Shear	
CNAQA1281	A	C1	1	1	9.279	0.249	45	0.0055	Interlaminar Shear	
CNAQA1291	A	C1	1	1	9.311	0.248	45	0.0055	Interlaminar Shear	9.218
CNAQA12A1	A	C1	1	1	9.057	0.251	45	0.0056	Interlaminar Shear	
CNAQA12B1	A	C1	1	1	9.161	0.248	45	0.0055	Interlaminar Shear	
CNAQA12C1	A	C1	1	1	9.153	0.246	45	0.0055	Interlaminar Shear	
CNAQA12J2	A	C1	1	2	8.479	0.249	45	0.0055	Interlaminar Shear	
CNAQA12K2	A	C1	1	2	8.442	0.249	45	0.0055	Interlaminar Shear	
CNAQA12L2	A	C1	1	2	8.594	0.250	45	0.0055	Interlaminar Shear	8.424
CNAQA12M2	A	C1	1	2	8.580	0.249	45	0.0055	Interlaminar Shear	
CNAQA12N2	A	C1	1	2	7.981	0.250	45	0.0056	Interlaminar Shear	
CNAQA12O2	A	C1	1	2	8.469	0.249	45	0.0055	Interlaminar Shear	
CNAQA1373	A	C1	1	3	8.921	0.246	45	0.0055	Interlaminar Shear	
CNAQA1383	A	C1	1	3	8.931	0.251	45	0.0056	Interlaminar Shear	
CNAQA1393	A	C1	1	3	8.865	0.249	45	0.0055	Interlaminar Shear	8.960
CNAQA13A3	A	C1	1	3	8.916	0.246	45	0.0055	Interlaminar Shear	
CNAQA13B3	A	C1	1	3	9.070	0.244	45	0.0054	Interlaminar Shear	
CNAQA13C3	A	C1	1	3	9.060	0.245	45	0.0054	Interlaminar Shear	
CNAQA13J4	A	C1	1	4	9.949	0.249	45	0.0055	Interlaminar Shear	
CNAQA13K4	A	C1	1	4	9.551	0.249	45	0.0055	Interlaminar Shear	
CNAQA13L4	A	C1	1	4	9.432	0.248	45	0.0055	Interlaminar Shear	9.525
CNAQA13M4	A	C1	1	4	9.184	0.248	45	0.0055	Interlaminar Shear	
CNAQA13N4	A	C1	1	4	9.599	0.248	45	0.0055	Interlaminar Shear	
CNAQA13O4	A	C1	1	4	9.434	0.247	45	0.0055	Interlaminar Shear	
CNAQA1475	A	C1	1	5	9.037	0.248	45	0.0055	Interlaminar Shear	
CNAQA1485	A	C1	1	5	9.023	0.249	45	0.0055	Interlaminar Shear	
CNAQA1495	A	C1	1	5	9.001	0.249	45	0.0055	Interlaminar Shear	9.084
CNAQA14A5	A	C1	1	5	9.228	0.249	45	0.0055	Interlaminar Shear	
CNAQA14C5	A	C1	1	5	9.131	0.248	45	0.0055	Interlaminar Shear	
CNAQA14J6	A	C1	1	6	9.457	0.243	45	0.0054	Interlaminar Shear	
CNAQA14K6	A	C1	1	6	9.585	0.244	45	0.0054	Interlaminar Shear	
CNAQA14L6	A	C1	1	6	9.536	0.244	45	0.0054	Interlaminar Shear	9.488
CNAQA14M6	A	C1	1	6	9.440	0.245	45	0.0054	Interlaminar Shear	
CNAQA14N6	A	C1	1	6	9.456	0.246	45	0.0055	Interlaminar Shear	
CNAQA14O6	A	C1	1	6	9.485	0.246	45	0.0055	Interlaminar Shear	
CNAQA1577	A	C1	1	7	6.942	0.245	45	0.0054	Interlaminar Shear	
CNAQA1587	A	C1	1	7	6.994	0.246	45	0.0055	Interlaminar Shear	
CNAQA1597	A	C1	1	7	6.860	0.246	45	0.0055	Interlaminar Shear	6.866
CNAQA15A7	A	C1	1	7	6.827	0.246	45	0.0055	Interlaminar Shear	
CNAQA15B7	A	C1	1	7	6.784	0.247	45	0.0055	Interlaminar Shear	
CNAQA15C7	A	C1	1	7	6.786	0.246	45	0.0055	Interlaminar Shear	
CNAQA15J8	A	C1	1	8	9.620	0.246	45	0.0055	Interlaminar Shear	
CNAQA15K8	A	C1	1	8	9.355	0.246	45	0.0055	Interlaminar Shear	
CNAQA15L8	A	C1	1	8	9.584	0.246	45	0.0055	Interlaminar Shear	9.434
CNAQA15M8	A	C1	1	8	9.594	0.247	45	0.0055	Interlaminar Shear	
CNAQA15N8	A	C1	1	8	9.228	0.248	45	0.0055	Interlaminar Shear	
CNAQA15O8	A	C1	1	8	9.225	0.249	45	0.0055	Interlaminar Shear	
CNAQB1679	B	C1	1	9	6.885	0.250	45	0.0055	Interlaminar Shear	
CNAQB1689	B	C1	1	9	6.935	0.250	45	0.0056	Interlaminar Shear	
CNAQB1699	B	C1	1	9	6.826	0.250	45	0.0056	Interlaminar Shear	6.904
CNAQB16A9	B	C1	1	9	6.951	0.250	45	0.0056	Interlaminar Shear	
CNAQB16B9	B	C1	1	9	6.933	0.248	45	0.0055	Interlaminar Shear	
CNAQB16C9	B	C1	1	9	6.894	0.249	45	0.0055	Interlaminar Shear	

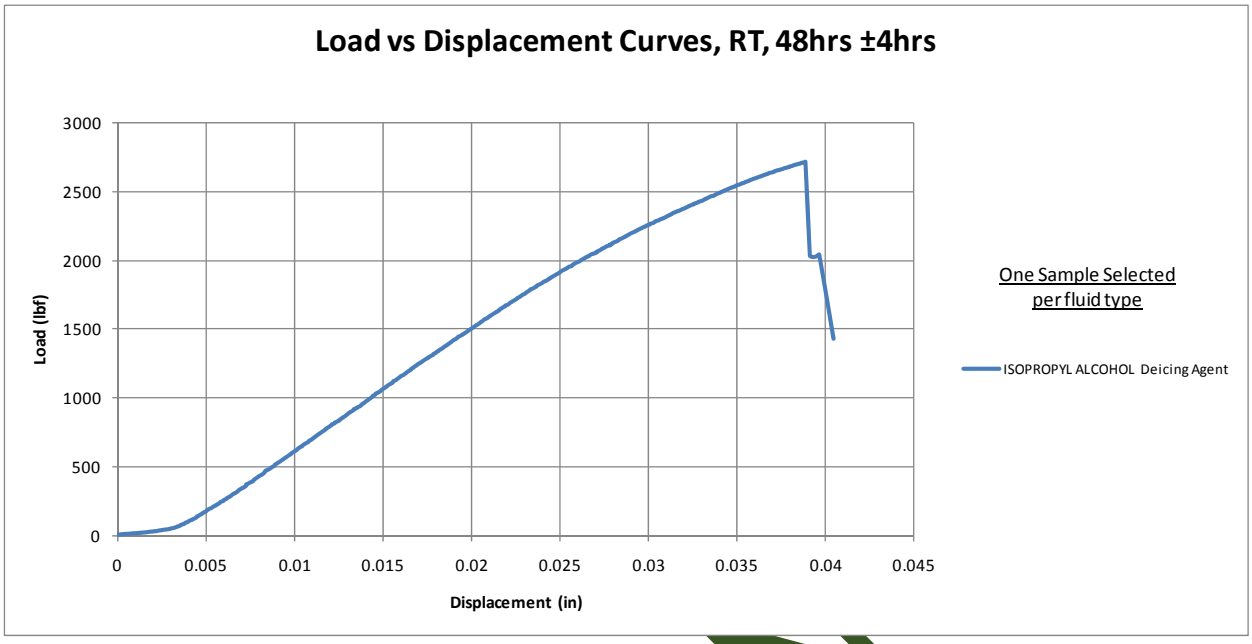
CNAQB16Jm	B	C1	1	m	9.534	0.248	45	0.0055	Interlaminar Shear	
CNAQB16Km	B	C1	1	m	9.331	0.249	45	0.0055	Interlaminar Shear	
CNAQB16Lm	B	C1	1	m	9.402	0.248	45	0.0055	Interlaminar Shear	9.380
CNAQB16Mm	B	C1	1	m	9.303	0.249	45	0.0055	Interlaminar Shear	
CNAQB16Nm	B	C1	1	m	9.359	0.250	45	0.0055	Interlaminar Shear	
CNAQB16Om	B	C1	1	m	9.349	0.250	45	0.0056	Interlaminar Shear	
CNAQB177n	B	C1	1	n	9.547	0.246	45	0.0055	Interlaminar Shear	
CNAQB178n	B	C1	1	n	9.560	0.246	45	0.0055	Interlaminar Shear	
CNAQB179n	B	C1	1	n	9.582	0.244	45	0.0054	Interlaminar Shear	9.520
CNAQB17An	B	C1	1	n	9.606	0.244	45	0.0054	Interlaminar Shear	
CNAQB17Bn	B	C1	1	n	9.462	0.244	45	0.0054	Interlaminar Shear	
CNAQB17Cn	B	C1	1	n	9.363	0.245	45	0.0055	Interlaminar Shear	
CNAQB17Jp	B	C1	1	p	9.712	0.248	45	0.0055	Interlaminar Shear	
CNAQB17Kp	B	C1	1	p	10.069	0.247	45	0.0055	Interlaminar Shear	
CNAQB17Lp	B	C1	1	p	9.786	0.246	45	0.0055	Interlaminar Shear	9.857
CNAQB17Mp	B	C1	1	p	9.805	0.246	45	0.0055	Interlaminar Shear	
CNAQB17Np	B	C1	1	p	9.893	0.246	45	0.0055	Interlaminar Shear	
CNAQB17Op	B	C1	1	p	9.879	0.246	45	0.0055	Interlaminar Shear	
CNAQB187s	B	C1	1	s	7.183	0.245	45	0.0054	Interlaminar Shear	
CNAQB188s	B	C1	1	s	7.244	0.246	45	0.0055	Interlaminar Shear	
CNAQB189s	B	C1	1	s	7.125	0.246	45	0.0055	Interlaminar Shear	7.123
CNAQB18As	B	C1	1	s	7.067	0.247	45	0.0055	Interlaminar Shear	
CNAQB18Bs	B	C1	1	s	7.032	0.246	45	0.0055	Interlaminar Shear	
CNAQB18Cs	B	C1	1	s	7.084	0.247	45	0.0055	Interlaminar Shear	
CNAQB18JK	B	C1	1	K	9.913	0.245	45	0.0054	Interlaminar Shear	
CNAQB18KK	B	C1	1	K	9.527	0.248	45	0.0055	Interlaminar Shear	
CNAQB18LK	B	C1	1	K	9.525	0.247	45	0.0055	Interlaminar Shear	9.549
CNAQB18MK	B	C1	1	K	9.411	0.245	45	0.0055	Interlaminar Shear	
CNAQB18NK	B	C1	1	K	9.488	0.245	45	0.0055	Interlaminar Shear	
CNAQB18OK	B	C1	1	K	9.431	0.247	45	0.0055	Interlaminar Shear	
CNAQB197J	B	C1	1	J	6.150	0.249	45	0.0055	Interlaminar Shear	
CNAQB198J	B	C1	1	J	5.628	0.250	45	0.0055	Interlaminar Shear	
CNAQB199J	B	C1	1	J	6.212	0.250	45	0.0056	Interlaminar Shear	5.935
CNAQB19AJ	B	C1	1	J	5.906	0.250	45	0.0055	Interlaminar Shear	
CNAQB19BJ	B	C1	1	J	5.915	0.249	45	0.0055	Interlaminar Shear	
CNAQB19CJ	B	C1	1	J	5.799	0.248	45	0.0055	Interlaminar Shear	

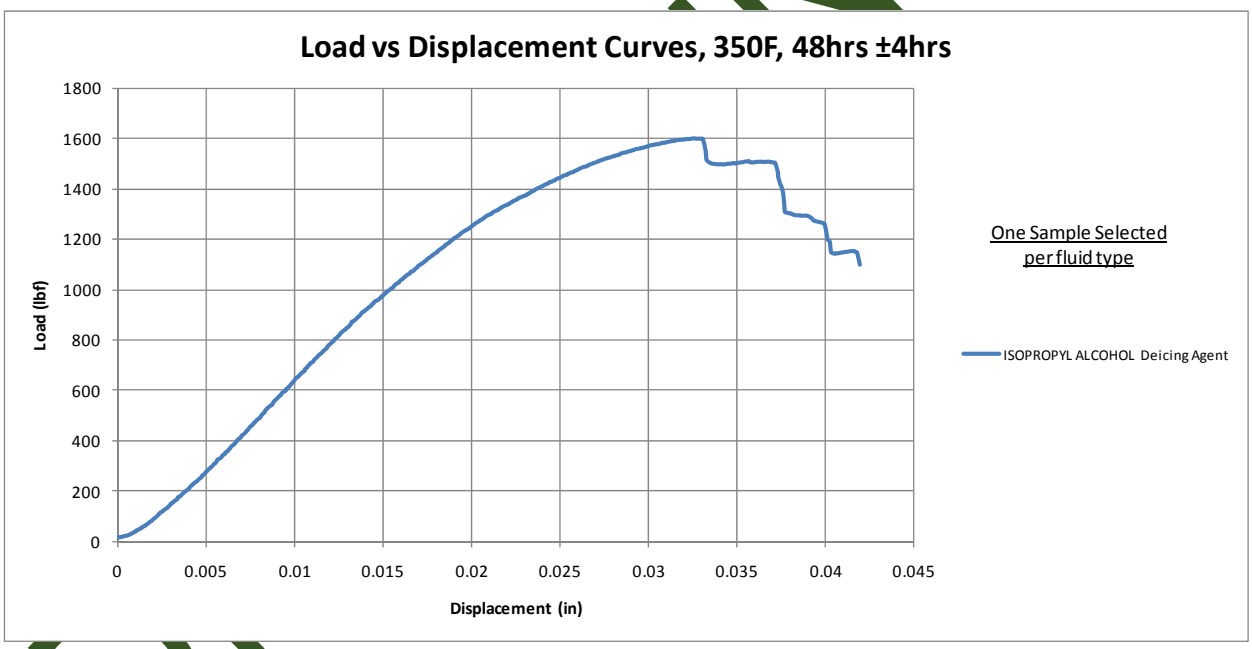


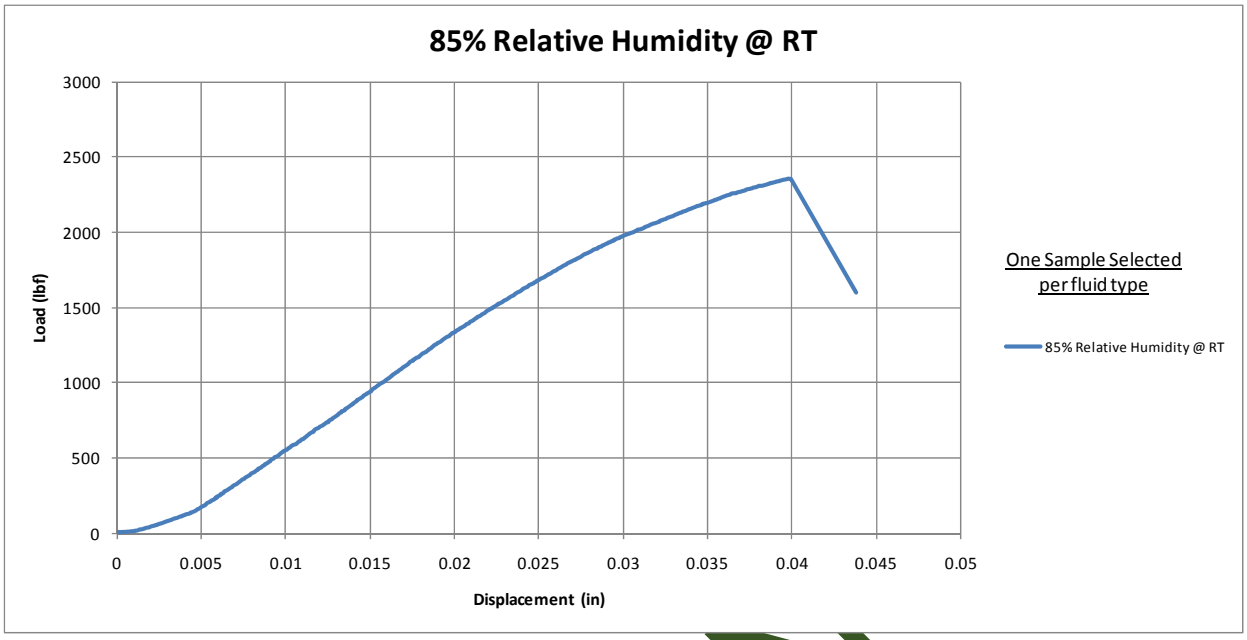

Load vs Displacement Curves for 90 Day (350F) Specimens
Load (lbf)
Displacement (in)
One Sample Selected per fluid type
100 Low level AV Fuel
Jet A Fuel
MIL 5606 hyrdaulic
DRY
MIL 83282 Hydraulic
MIL 7808 Engine Oil
MIL 23699 Engine Oil
Salt Water
SKYDROL LD-4
50% Water, 50% SKYDROL LD-4
Distilled Water

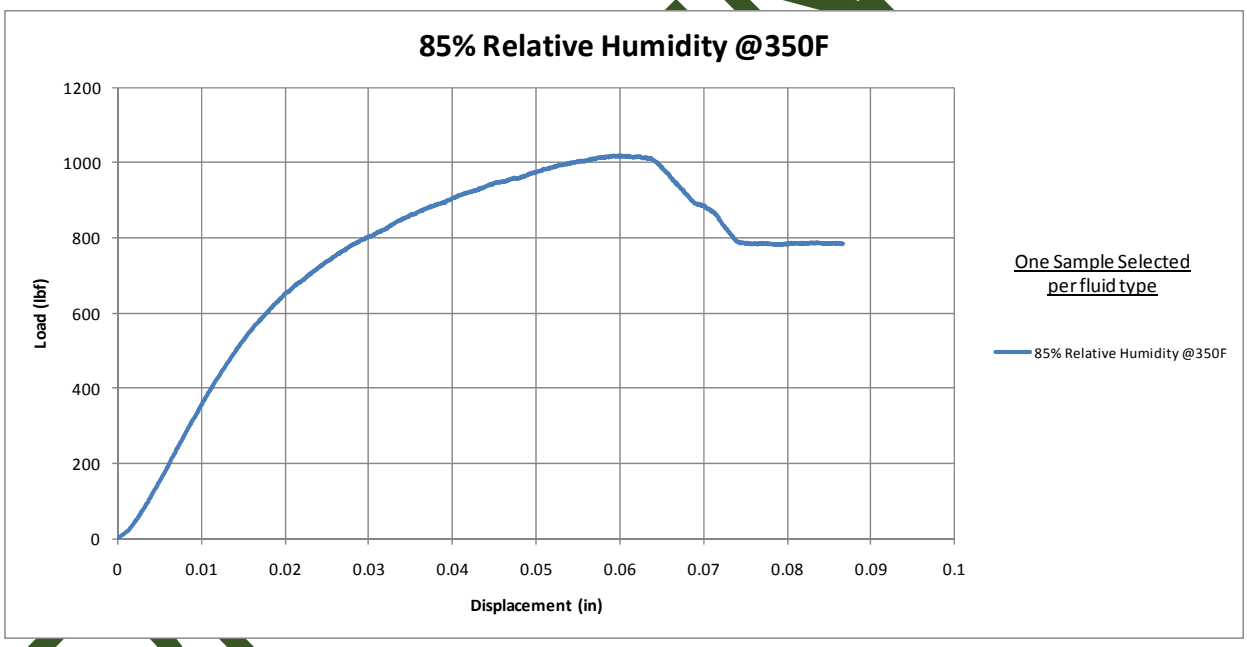

Load vs Displacement Curves for 90 min. RT Specimens
Load (lbf)
Displacement (in)
One Sample Selected per fluid type
MEK Washing Fluid ASTM D740
Polypropylene Glycol Deicer


Load vs Displacement Curves for 90 min. (350F) Specimens
Load (lbf)
1800
1600
1400
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
Displacement (in)
One Sample Selected per fluid type
MEK Washing Fluid ASTM D740
Polypropylene Glycol Deicer


Load vs Displacement Curves, RT, 48hrs ±4hrs
Load (lbf)
3000
2500
2000
1500
1000
500
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
Displacement (in)
One Sample Selected per fluid type
ISOPROPYL ALCOHOL Deicing Agent

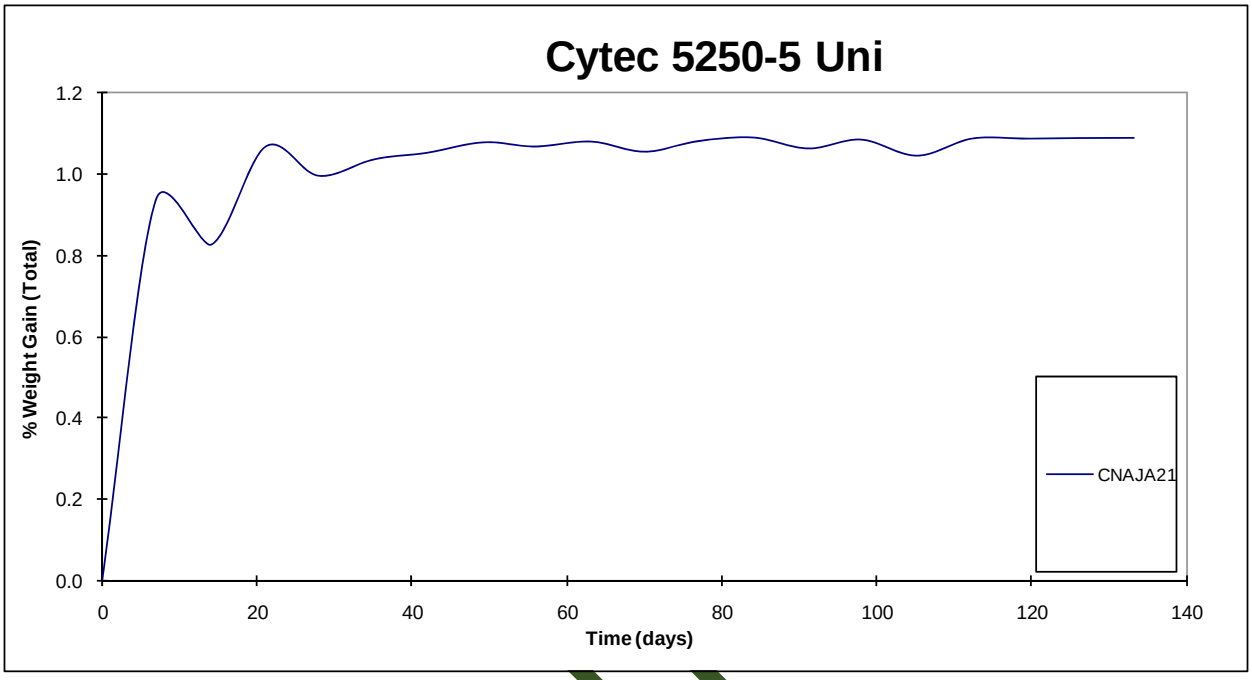

Load vs Displacement Curves, 350F, 48hrs ±4hrs
Load (lbf)
1800
1600
1400
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
Displacement (in)
One Sample Selected per fluid type
ISOPROPYL ALCOHOL Deicing Agent


85% Relative Humidity @ RT
Load (lbf)
3000
2500
2000
1500
1000
500
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
Displacement (in)
One Sample Selected per fluid type
85% Relative Humidity @ RT

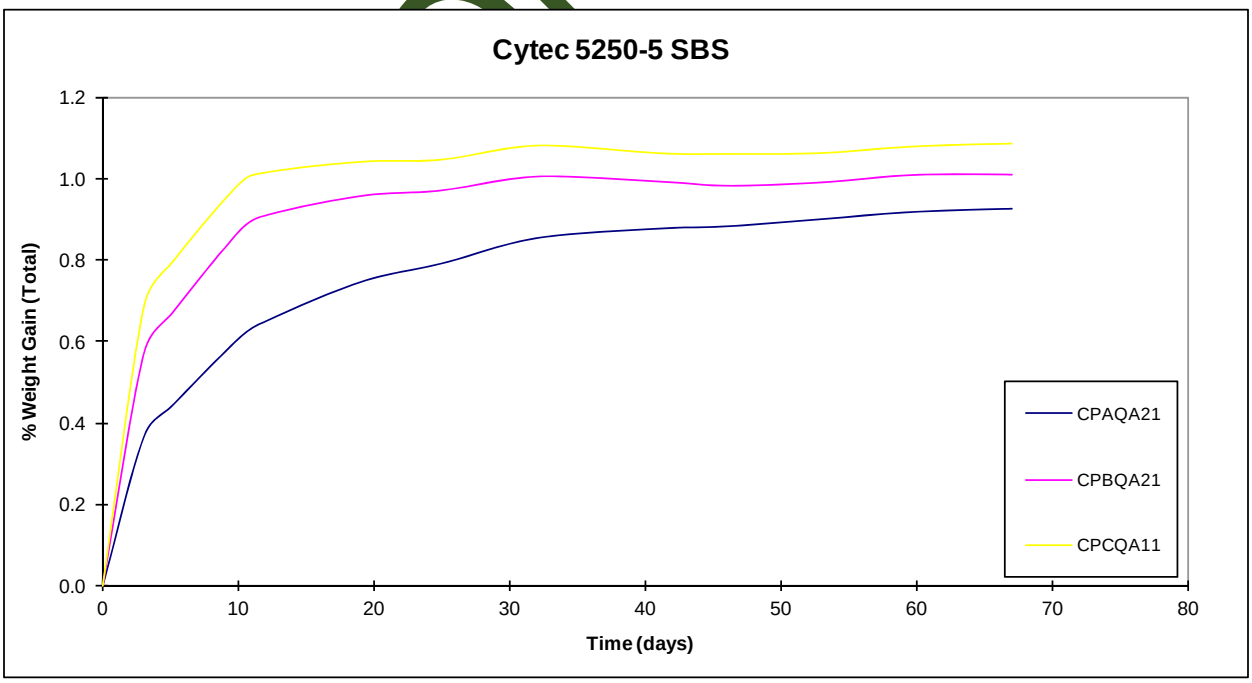

85% Relative Humidity @350F
Load (lbf)
1200
1000
800
600
400
200
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Displacement (in)
One Sample Selected per fluid type
85% Relative Humidity @350F

7. Moisture Conditioning Charts

7.1 Longitudinal Tension – Thinnest Panel



7.2 Short Beam Strength – Thickest Panel



For “wet” mechanical test specimens, the drying procedures may not have completely dried the specimens prior to moisture conditioning, so the total amount of moisture absorbed by the specimens may be higher than those recorded in the moisture gain charts.

The rest of the curves can be found on the CD that accompanies this report.

8. DMA Results

There are two sets of dry DMA data; one set was dried according to the test plan and the other set was “thoroughly dried” at 250F until equilibrium weight loss was achieved. Equilibrium weight loss is met when the difference between two consecutive readings taken seven days apart is less than 0.02%. The drying procedure in the test plan is less rigorous than the “thoroughly dried” procedures. The more rigorous procedure was not included in the test plan because the test plan authors/reviewers expected the test panels to be tested within couple of months from their date of panel fabrication. Due to unexpected delays in the program, the test panels were kept in laboratory environment for approximately 17 months and hence absorbed more moisture than anticipated (panel fabricated- 3/08; mechanical specimens tested – 8/09; DMA specimens tested – 12/10). DMA samples were tested 15 months after initial mechanical testing.

All the “dry” mechanical test specimens were dried in accordance with the drying procedures in the test plan. Since moisture is less detrimental to composite materials properties at room temperature than at elevated temperature, the “thoroughly dried” specimens are expected to have only slightly higher mechanical properties. For comparison purpose, some DMA specimens were dried using both drying methods; however, the sample set dried by means of weight loss monitoring was done with a substantially smaller sample size. Comparing Onset Storage Modulus data, samples dried according to test plan procedures yielded an average dry Tg of ~489F for Qualification samples. Samples that were dried out thoroughly by means of weight loss measurement yielded an average dry Tg of ~ 516F.

DMA Results Summary

Cytec 5250-5 UNI CNAPX XX DRY

Sample #	Onset Storage Modulus Average		Peak of Tangent Delta Average	
	Tg [°C]	Tg [°F]	Tg [°C]	Tg [°F]
CNAPA 11	253.86	488.95	287.61	549.69
CNAPA 21	254.15	489.47	288.10	550.58
CNAPB 11	256.34	493.42	289.77	553.59
CNAPB 21	255.85	492.52	289.75	553.55
CNAPC 11	247.90	478.21	276.23	529.21
CNAPC 21	255.70	492.25	290.46	554.83
AVERAGE		**489.14**		

DMA Results Summary

Cytec C21 5250-5 UNI CNAUX XX BONE DRY

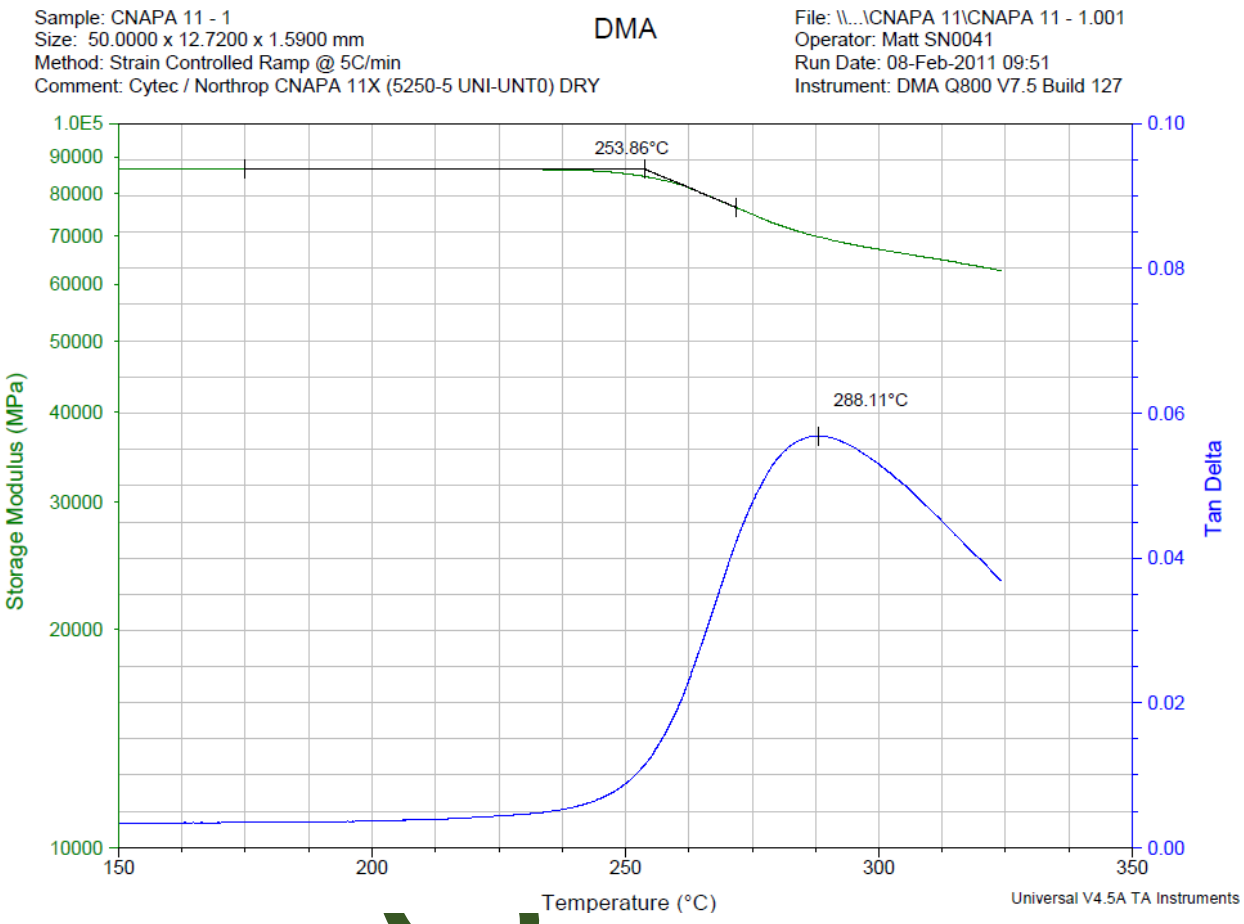
Sample #	Onset Storage Modulus Average		Peak of Tangent Delta Average	
	Tg [°C]	Tg [°F]	Tg [°C]	Tg [°F]
CNAUA 11	264.47	508.05	288.70	551.67
CNAUA 21	274.78	526.61	300.35	572.62
CNAUB 11	276.45	529.61	301.41	574.54
CNAPC 11	262.61	504.70	287.60	549.68
CNAPC 21	267.45	513.41	302.49	576.48
AVERAGE		**516.47**		

DMA Results Summary

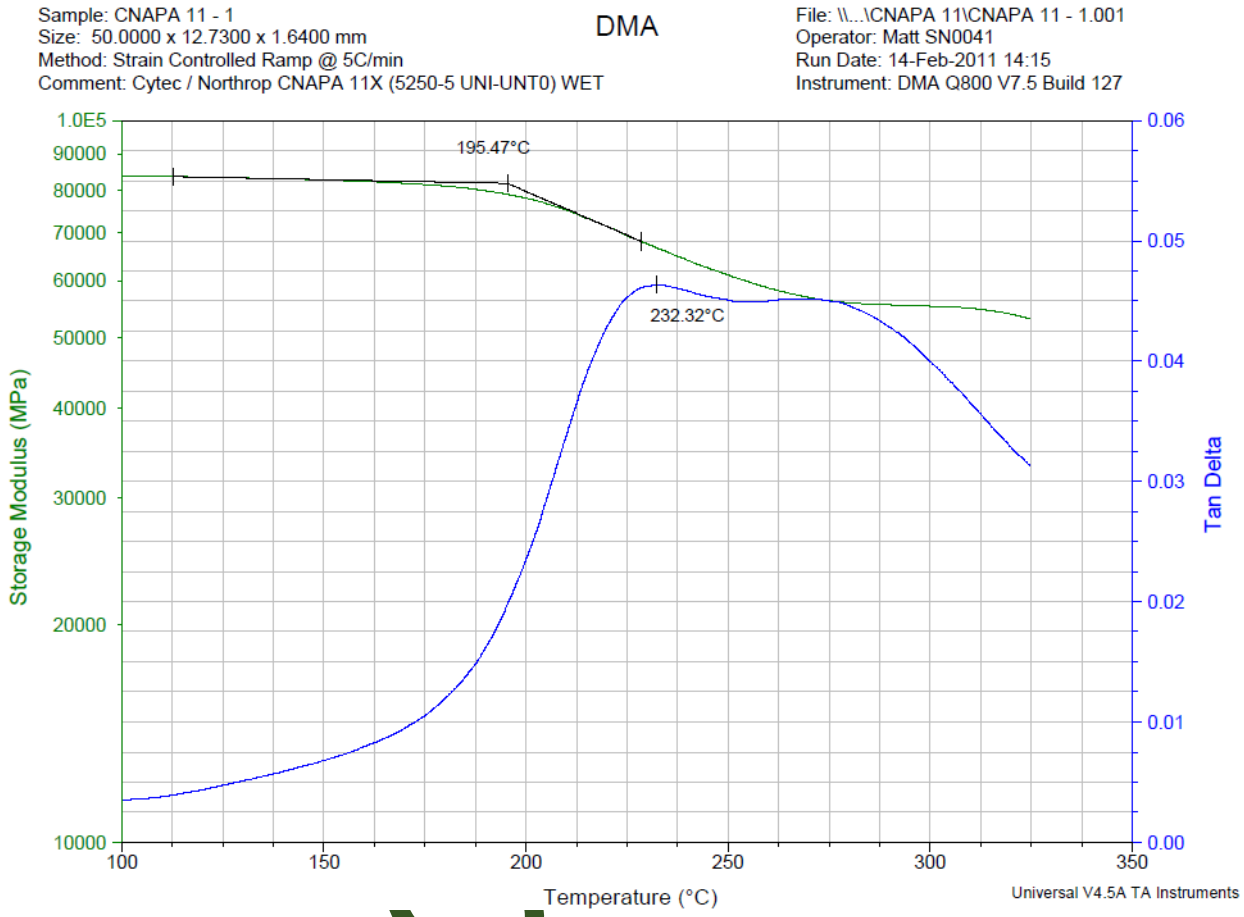
Cytec 5250-5 UNI CNAPX XX WET

Sample #	Onset Storage Modulus Average		Peak of Tangent Delta Average	
	Tg [°C]	Tg [°F]	Tg [°C]	Tg [°F]
CNAPA 11	195.31	383.56	232.50	450.49
CNAPA 21	195.76	384.37	230.89	447.60
CNAPB 11	197.70	387.86	227.65	441.77
CNAPB 21	194.49	382.08	225.38	437.68
CNAPC 11	193.43	380.17	219.50	427.09
CNAPC 21	194.32	381.77	224.11	435.40
AVERAGE		**383.30**		

8.1 DMA Dry Batch A



8.2 DMA Wet Batch A



9. Physical Test Results

The physical test results are provided in the CD accompanying this report.

10. Deviations

1. For fluid sensitivity testing Jet Reference fluid called out in the NCAMP test plan is a rare fuel and therefore extremely expensive. As a replacement, we used Jet Fuel A per ASTM D1655. AMS2629 is a jet reference fuel intended to simulate jet engine fuel only. This was approved by all participating panel fabricators.
2. SBS1 sampling were taken from OHC1 panel instead of CAI1 panel to fulfill batch requirements.