Cytec Cycom 5215 T650 6K-135-5HS Fabric 36%RC
Qualification Material Property Data Report

FAA Special Project Number SP4612WI-Q

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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 MIL-HDBK-17-1F—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 SP4612WI-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 does 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 a 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 Cycom 5215 6K-135-5HS fabric Qualification Statistical Analysis Report NCP-RP-2010-045 N/C or later revision. The qualification material was procured to NCAMP Material Specification NMS 323/2 Rev A dated July 16, 2007. The qualification test panels were cured in accordance with NCAMP Process Specification NPS 81323 Revision A dated July 16, 2007 Baseline "C" Cure Cycle. The NCAMP Test Plan NTP 3223Q1 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 MIL-HDBK-17-1F. 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 MIL-HDBK-17-1F are adequate for the given program.

Aircraft companies should not use the data published in this report without specifying NCAMP Material Specification NMS 323/2. NMS 323/2 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 323/2.* NMS 323/2 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 Used

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
ν_{12}^{c}	major Poisson's Ratio, compression
ν_{21}^{c}	minor Poisson's Ratio, compression
$F_{12}^{s5\% strain}$	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 Specimen Naming Format

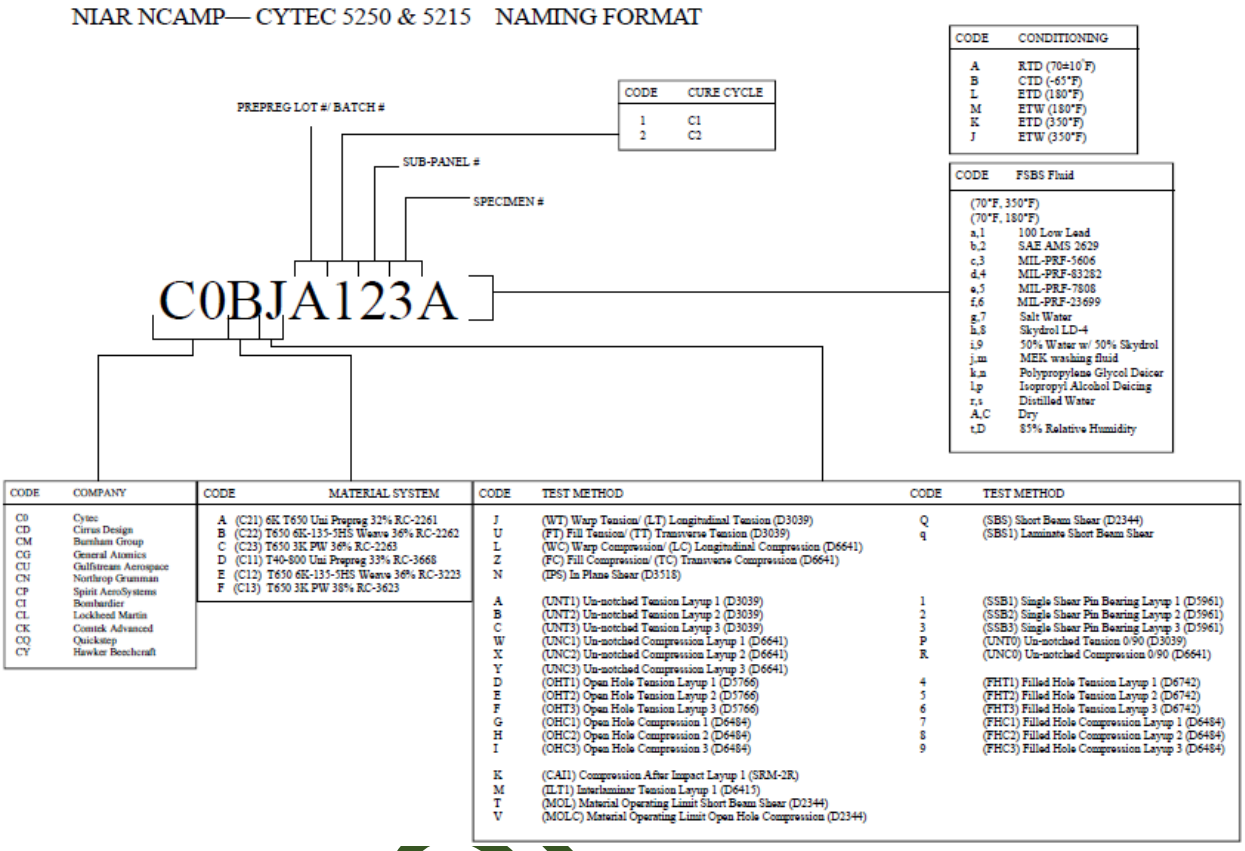


Figure 1-1: Naming Format

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.

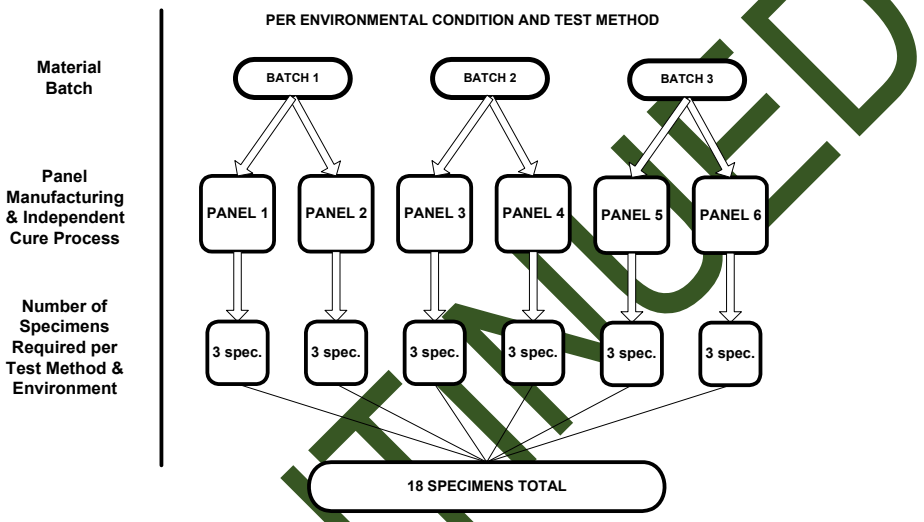


Figure 1-2: Specimen Selection Methodology

All panels were fabricated in accordance with NCAMP Process Specification 81323 “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.

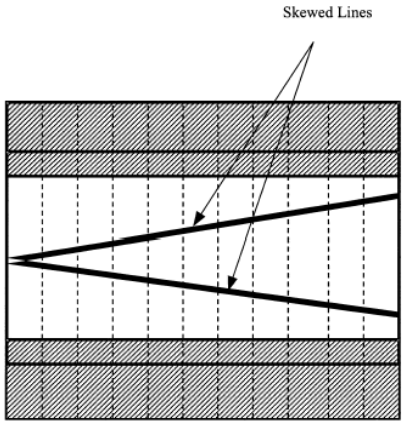


Figure 1-3: Specimen Traceability Line

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.

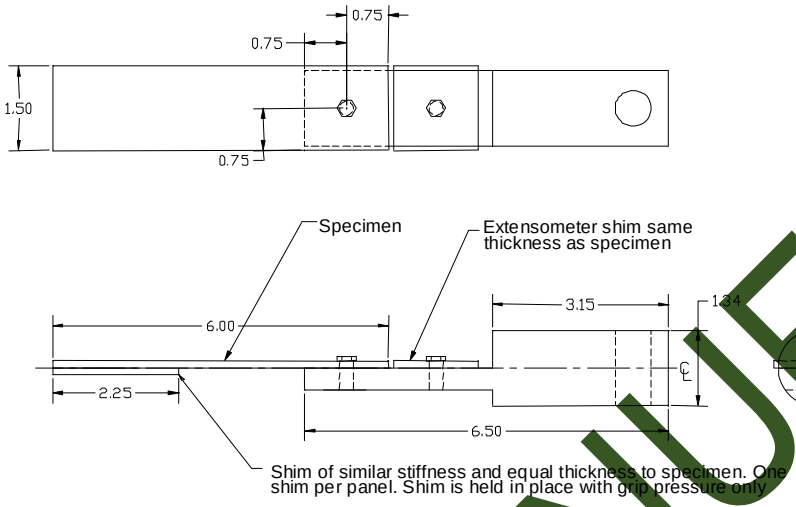


Figure 1-4: Modified ASTM D5961 (Single Shear Bearing) Specimen and Loading Arrangement

1.5.2 Specimen & Testing Details

1.5.2.1 Tabbing

No tabs were used for this program.

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 NASM 21084 nuts and MS21206 washers for FHT and FHC
2) NASM 21297-04013 bolts with MS 21084 nuts and MS21206 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 (warp direction)	Test Type and Direction	Property	Number of Batches x Number of Panels x Number of Test Specimens			
			Test Temperature/Moisture Condition			
			CTD	RTD	ETD	ETW
$[0]_{4S}$	ASTM D3039 Warp Tension	Strength, Modulus, and Poisson's Ratio	3x2x3	3x2x3		3x2x3
$[0]_{4S}$	ASTM D6641 Warp Compression (Note 1)	Strength and Modulus	3x2x3	3x2x3	3x2x3	3x2x3
$[90]_{4S}$	ASTM D3039 Fill Tension	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[90]_{4S}$	ASTM D6641 Fill Compression (Note 1)	Strength and Modulus	3x2x3	3x2x3	3x2x3	3x2x3
$[45/-45]_{2S}$	ASTM D3518 In-Plane Shear	Strength and Modulus	3x2x3	3x2x3		3x2x3
$[0]_{17}$	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.

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]S	Strength & modulus	3x2x3	3x2x3	3x2x3
(10/80/10) UNT2	ASTM D3039 Un-notched Tension [45/-45/90/45/-45]S	Strength & modulus	3x2x3	3x2x3	3x2x3
(40/20/40) UNT3	ASTM D3039 Un-notched Tension [0/90/45/0/90]S	Strength & modulus	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) UNC1	ASTM D6641 Un-notched Compression (4) [45/0/-45/90]S	Strength & modulus		3x2x3	3x2x3
(10/80/10) UNC2	ASTM D6641 Un-notched Compression (4) [45/-45/90/45/-45]S	Strength & modulus		3x2x3	3x2x3
(40/20/40) UNC3	ASTM D6641 Un-notched Compression (4) [0/90/45/0/90]S	Strength & modulus		3x2x3	3x2x3
(25/50/25 - QI) SBS1	ASTM D2344 Short Beam [45/0/-45/90/-45/90]S (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]S	Strength	3x2x3	3x2x3	3x2x3
(10/80/10) OHT2	ASTM D5766 Open Hole Tension (1) [45/-45/90/45/-45]S	Strength	3x2x3	3x2x3	3x2x3
(40/20/40) OHT3	ASTM D5766 Open Hole Tension (1) [0/90/45/0/90]S	Strength	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) FHT1	ASTM D6742 Filled Hole Tension (2) [45/0/-45/90]S	Strength	3x2x3	3x2x3	3x2x3
(10/80/10) FHT2	ASTM D6742 Filled Hole Tension (2) [45/-45/90/45/-45]S	Strength	3x2x3	3x2x3	3x2x3
(40/20/40) FHT3	ASTM D6742 Filled Hole Tension (2) [0/90/45/0/90]S	Strength	3x2x3	3x2x3	3x2x3
(25/50/25 - QI) OHC1	ASTM D6484 Open Hole Compression (1)(4) [45/0/-45/90/-45/90]S	Strength		3x2x3	3x2x3
(10/80/10) OHC2	ASTM D6484 Open Hole Compression (1)(4) [45/-45/90/45/-45]S	Strength		3x2x3	3x2x3
(40/20/40) OHC3	ASTM D6484 Open Hole Compression (1)(4) [0/90/45/0/90]S	Strength		3x2x3	3x2x3
(25/50/25 - QI) FHC1	ASTM D6484 Filled Hole Compression (2) [45/0/-45/90/-45/90]S	Strength		3x2x3	3x2x3
(10/80/10) FHC2	ASTM D6484 Filled Hole Compression (2) [45/-45/90/45/-45]S	Strength		3x2x3	3x2x3
(40/20/40) FHC3	ASTM D6484 Filled Hole Compression (2) [0/90/45/0/90]S	Strength		3x2x3	3x2x3
(25/50/25 - QI) SSB1	ASTM D5961 Single Shear Bearing (3) (6) [45/0/-45/90]S	Strength & Deformation		3x2x3	3x2x3
(10/80/10) SSB2	ASTM D5961 Single Shear Bearing (3) (6) [45/-45/90/-45/45]	Strength & Deformation		3x2x3	3x2x3
(40/20/40) SSB3	ASTM D5961 Single Shear Bearing (3) (6) [0/90/45/90/0]	Strength & Deformation		3x2x3	3x2x3
(50/0/50) ILT	ASTM D6415 Interlaminar Tension [0]11	Strength	1x1x6	1x1x6	1x1x6
(25/50/25 - QI) CAI1	ASTM D7136 & D7137 Compression After Impact (1500 in.lb/in) (4) [45/0/-45/90/-45/90]S	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 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.

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, dry, room temperature dry

ETD = 180±5°F, dry

ETW = 180±5°F, wet (equilibrium moisture content)

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 epoxy 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 was achieved when the average moisture content of the traveler specimen changed by less than 0.02% for two consecutive readings 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 three 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 5 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 $[0°]_{17}$ 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 epoxy 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	180°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	180°F	FS12ET
MIL-PRF-5606 Hydraulic Oil	90 days min. @ 70°F±10°F	70°F	FS13RT
	90 days min. @ 70°F±10°F	180°F	FS13ET
MIL-PRF-83282 Hydraulic Oil	90 days min. @ 70°F±10°F	70°F	FS14RT
	90 days min. @ 70°F±10°F	180°F	FS14ET
MIL-PRF-7808 Engine Oil	90 days min. @ 70°F±10°F	70°F	FS15RT
	90 days min. @ 70°F±10°F	180°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	180°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	180°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	180°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	180°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	180°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	180°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	180°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	180°F	FS31ET
Dry	Dry per section 6.1	70°F	FS32RT
	Dry per section 6.1	180°F	FS32ET
85% Relative Humidity	Per section 6.1	70°F	FS33RT
	Per section 6.1	180°F	FS33ET

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.

The average cured ply thickness of 0.0155 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.

For Cytec 5215 5 Harness, we predicted the cured ply thickness to be 0.01475 inch. However, the as-measured cured ply thickness of the qualification panels is 0.01555 inch. The grand average of all qualification and equivalency panel thickness is 0.01536 inch, with 0.01496 being the smallest and 0.01559 being the largest measured values. 0.0155 inch was suggested as the nominal CPT and all participants agreed it was acceptable.

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 ® 5215 T650 6K-135-5HS fabric
Material Specification: NMS 323/2

CYTEC CYCOM ® 5215 T650 6K-135-5HS Lamina Properties Summary

Fabric: T650 6K 5HS **Resin:** CYCOM® 5215

Tg(dry): 326.70 F **Tg(wet): 243.64 F** **Tg METHOD:** DMA (SRM 18R-94)

PROCESSING: NPS 81323 Baseline "C" Cure Cycle

Date of fiber manufacture	8/16/2006	**Date of testing**	10/27/2009 - 11/9/2010
Date of resin manufacture	9/25/2006 to 12/06/2006	**Date of data submittal**	February-11
Date of prepreg manufacture	9/27/2006 to 12/13/2006		
Date of composite manufacture	2/1/2009		

LAMINA MECHANICAL PROPERTY SUMMARY
Data reported as: Normalized & Measured
(Normalized by CPT= .0155 inch)

	CTD Mean		RTD Mean		ETD Mean		ETW Mean	
	Normalized	Measured	Normalized	Measured	Normalized	Measured	Normalized	Measured
F_1^{tu} (ksi)	122.20	122.59	128.16	128.84	---	---	130.38	130.53
E_1^t (Msi)	9.69	9.72	10.07	10.12	---	---	9.56	9.57
ν_{12}	---	0.058	---	0.041	---	---	---	0.047
F_2^{tu} (ksi)	115.25	114.58	121.56	121.77	---	---	113.73	113.24
E_2^t (Msi)	9.61	9.56	9.50	9.51	---	---	9.61	9.56
F_1^{cu} (ksi)	104.33	104.99	95.12	96.68	79.58	80.39	56.32	56.32
E_1^c (Msi)	8.85	8.93	8.64	8.79	8.68	8.77	8.71	8.71
ν_{12}^c	---	0.075	---	0.050	---	0.048	---	0.045
F_2^{cu} (ksi)	104.12	104.78	93.85	95.19	79.65	80.50	60.75	60.94
E_2^c (Msi)	8.74	8.80	8.70	8.83	8.54	8.65	8.56	8.63
ν_{21}^c	---	0.085	---	0.050	---	0.047	---	0.042
$F_{12}^{s\ max}$ (ksi)	---	11.89	---	---	---	---	---	---
$F_{12}^{s5\%strain}$ (ksi)	---	11.46	---	---	---	---	---	6.06
$F_{12}^{s0.2\%}$ (ksi)	---	8.44	---	6.09	---	---	---	3.61
G_{12}^s (Msi)	---	0.67	---	0.56	---	---	---	0.38
SBS (ksi)	---	9.25	---	9.26	---	7.79	---	6.42

Table 2-1: Lamina Summary Data

2.2 Laminate Level Test Summary

Prepreg Material: CYTEC CYCOM ® 5215 T650 6K-135-5HS fabric
Material Specification: NMS 323/2

CYTEC CYCOM ® 5215 T650 6K-135-5HS Laminate Properties Summary

Fabric: T650 6K 5HS **Resin:** CYCOM® 5215

Tg(dry): 326.70 F **Tg(wet): 243.64 F** **Tg METHOD:** DMA (SRM 18R-94)

PROCESSING: NPS 81323 Baseline "C" Cure Cycle

Date of fiber manufacture	8/16/2006	**Date of testing**	10/27/2009 - 11/9/2010
Date of resin manufacture	9/25/2006 to 12/06/2006	**Date of data submittal**	February-11
Date of prepreg manufacture	9/27/2006 to 12/13/2006		
Date of composite manufacture	2/1/2009		

LAMINATE MECHANICAL PROPERTY SUMMARY
Data reported as: Normalized & Measured
(Normalized by CPT= .0155 inch)

	Layup:	25/50/25		10/80/10		40/20/40	
	Test Condition	Normalized	Measured	Normalized	Measured	Normalized	Measured
OHT Strength (ksi)	CTD	48.33	48.62	36.08	36.16	61.72	62.46
	RTD	51.14	51.51	34.89	34.93	66.56	66.97
	ETW	55.93	55.98	32.23	32.23	74.63	75.32
OHC Strength (ksi)	RTD	41.38	41.66	31.85	31.88	45.17	45.26
	ETW	32.77	32.95	23.57	23.58	34.64	34.80
UNT Strength (ksi)	CTD	78.88	79.22	48.49	48.86	101.49	101.66
	RTD	81.67	82.16	47.83	48.18	107.16	107.23
	ETW	84.54	84.42	41.38	41.49	109.12	109.05
Modulus (msi)	CTD	6.85	6.88	4.44	4.48	8.74	8.75
	RTD	6.47	6.51	4.17	4.21	8.48	8.49
	ETW	6.56	6.55	3.82	3.83	8.55	8.55
UNC Strength (ksi)	RTD	71.99	73.45	46.49	47.15	70.00	71.04
	ETW	48.24	48.80	31.89	32.18	53.58	53.79
Modulus (msi)	RTD	6.28	6.41	3.94	3.99	7.83	7.95
	ETW	6.17	6.21	3.68	3.68	8.00	7.99
νUNC	RTD	---	0.338	---	0.556	---	0.137
	ETW	---	0.365	---	0.616	---	0.134
FHT Strength (ksi)	CTD	52.12	52.25	41.62	41.80	60.34	60.69
	RTD	53.42	53.27	39.30	39.36	63.00	63.27
	ETW	54.34	54.29	32.73	32.76	67.27	67.51
FHC Strength (ksi)	RTD	63.96	64.17	45.55	45.48	66.37	66.06
	ETW	45.73	45.91	33.12	33.10	48.97	48.82
SBS1 Strength (ksi)	RTD	---	7.89	---	---	---	---
	ETW	---	5.75	---	---	---	---
SSB Ultimate Strength (ksi)	RTD	107.71	110.35	102.22	103.80	95.10	97.42
	ETW	89.75	90.76	86.00	86.44	80.64	80.71
SSB 2% Offset Strength (ksi)	RTD	88.74	90.90	88.22	89.55	84.40	86.44
	ETW	76.89	77.74	69.43	69.78	67.84	67.90
ILT Strength (ksi)	CTD		5.95				
	RTD	---	3.92	---	---	---	---
	ETW	---	3.01	---	---	---	---
CAI Strength (ksi)	RTD	25.26	25.43	---	---	---	---

Table 2-2: Laminate Summary Data

2.3 Individual Test Summaries

2.3.1 Warp Tension Properties (WT)

Material: Cytec Cycom 5215 T650 6K-135-5HS Fabric

Tension, 1-axis
Gr/ Ep
Cytec Cycom 5215 T650 6K-135-5HS Fabric
[0]4S

Resin content: 36.64 %wt **Comp. density:** 1.52 g/cc
Fiber volume: 53.84 %vol
Ply count: 8

Test method: ASTM D3039-00 **Modulus calculation:** 1000 to 3000 microstrain

Normalized by: 0.0155 in. CPT

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		C0EJX X1XB		C0EJX X1XA		C0EJX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
F_1^{tu} (ksi)	**Mean**	122.20	122.59	128.16	128.84	130.38	130.53
	Minimum	109.57	110.32	114.66	116.65	123.83	124.87
	Maximum	131.02	132.34	137.47	138.99	140.28	140.85
	C.V.(%)	5.17	5.08	5.30	5.39	2.97	2.99
	No. Specimens	21		21		22	
	No. Prepreg Lots	3		3		3	
E_1^t (Msi)	**Mean**	9.69	9.72	10.07	10.12	9.56	9.57
	Minimum	9.19	9.26	9.52	9.53	9.44	9.40
	Maximum	10.17	10.11	11.68	11.53	9.77	9.78
	C.V.(%)	2.47	2.45	6.38	6.02	0.85	1.16
	No. Specimens	21		21		22	
	No. Prepreg Lots	3		3		3	
ν_{12}	**Mean**	0.058		0.041		0.047	
	No. Specimens	11		21		18	
	No. Prepreg Lots	3		3		3	

2.3.2 Fill Tension Properties (FT)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Tension, 2-axis**		
						Gr/ Ep		
Resin content:	36.17%wt		**Comp. density:**	1.52 g/cc		**Cytec Cycom 5215 T650 6K-135-5HS Fabric**		
Fiber volume:	54.41 %vol					**[90]4S**		
Ply count:	8							
Test method:	ASTM D3039-00		**Modulus calculation:**	1000 to 3000 microstrain				
Normalized by:	0.0155	in. CPT						

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		C0EUX X1XB		C0EUX X1XA		C0EUX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
F_2^{tu} (ksi)	**Mean**	115.25	114.58	121.56	121.77	113.73	113.24
	Minimum	102.55	101.81	104.82	104.83	78.83	78.08
	Maximum	126.02	123.81	132.07	131.66	132.20	130.73
	C.V.(%)	6.37	6.44	6.19	6.21	12.91	12.72
	No. Specimens	21		20		22	
	No. Prepreg Lots	3		3		3	
E_2^t (Msi)	**Mean**	9.61	9.56	9.50	9.51	9.61	9.56
	Minimum	9.44	9.35	9.35	9.28	9.31	9.15
	Maximum	9.90	9.97	9.75	9.76	9.96	9.93
	C.V.(%)	1.42	1.73	1.09	1.57	1.82	2.38
	No. Specimens	21		20		25	
	No. Prepreg Lots	3		3		3	

2.3.3 Warp Compression Properties (WC)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric							**Compression, 1-axis** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [0]4S		
Resin content:	37.36 %wt		**Comp. density:** 1.51 g/cc							
Fiber volume:	53.04 %vol									
Ply count:	8									
Test method:	ASTM D6641-01e1		**Modulus calculation:** 1000 to 3000 microstrain							
Normalized by:	0.0155	in. CPT								
			CTD		**RTD**		**ETD**		**ETW**	
Test Temperature [°F]			-65		70		180		180	
Moisture Conditioning			dry		dry		dry		equilibrium	
Equilibrium at T, RH									160 F,85%	
Source code			C0ELX X1XB		C0ELX X1XA		C0ELX X1XL		C0ELX X1XM	
			Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean		104.33	104.99	95.12	96.68	79.58	80.39	56.32	56.32
	Minimum		87.03	88.17	84.53	86.31	62.55	62.39	49.52	49.79
	Maximum		116.31	117.54	104.78	104.85	89.10	9.46	66.13	65.47
F_1^{cu} **(ksi)**	**C.V.(%)**		7.96	8.15	5.01	5.02	8.65	9.02	9.32	8.99
	No. Specimens		20		21		18		22	
	No. Prepreg Lots		3		3		3		3	
	Mean		8.85	8.93	8.64	8.79	8.68	8.77	8.71	8.71
	Minimum		8.26	8.20	8.16	8.31	8.09	8.19	8.14	8.07
	Maximum		9.67	9.80	9.27	9.43	9.43	9.46	9.21	9.21
E_1^c **(Msi)**	**C.V.(%)**		4.13	4.70	3.12	3.32	4.13	3.80	3.09	3.13
	No. Specimens		24		22		25		21	
	No. Prepreg Lots		3		3		3		3	
	Mean		0.075		0.050		0.048		0.045	
ν_{12}	**No. Specimens**		10		22		24		19	
	No. Prepreg Lots		3		3		3		3	

2.3.4 Fill Compression Properties (FC)

Material: Cytec Cycom 5215 T650 6K-135-5HS Fabric

Resin content: 36.99 %wt **Comp. density:** 1.52 g/cc
Fiber volume: 53.51 %vol
Ply count: 8

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

Normalized by: 0.0155 in. CPT

Compression, 2-axis
Gr/ Ep
Cytec Cycom 5215 T650 6K-135-5HS Fabric
[90]4S

		CTD		RTD		ETD		ETW	
Test Temperature [°F]		-65		70		180		180	
Moisture Conditioning		dry		dry		dry		equilibrium	
Equilibrium at T, RH								160 F,85%	
Source code		C0EZX X1XB		C0EZX X1XA		C0EZX X1XL		C0EZX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
	Mean	104.12	104.78	93.85	95.19	79.65	80.50	60.75	60.94
	Minimum	91.32	92.06	82.07	81.73	66.42	66.06	47.05	47.08
	Maximum	117.91	118.23	105.31	108.62	86.74	87.53	70.47	70.33
F_2^{cu} (ksi)	**C.V.(%)**	6.96	6.79	7.05	7.60	7.12	6.99	11.12	11.39
	No. Specimens	20		20		19		23	
	No. Prepreg Lots	3		3		3		3	
	Mean	8.74	8.80	8.70	8.83	8.54	8.65	8.56	8.63
	Minimum	7.59	7.52	8.14	8.38	8.06	8.09	8.16	8.11
	Maximum	9.43	9.60	9.28	9.70	9.06	9.37	9.00	9.09
E_2^c (Msi)	**C.V.(%)**	4.43	4.81	3.63	4.03	2.83	3.45	3.28	3.45
	No. Specimens	21		21		21		21	
	No. Prepreg Lots	3		3		3		3	
	Mean	0.085		0.050		0.047		0.042	
ν_{21}	**No. Specimens**	3		21		21		20	
	No. Prepreg Lots	3		3		3		3	

2.3.5 In-Plane Shear Properties (IPS)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**In-Plane Shear**	
Resin content:	36.78 %wt	**Comp. density:**	1.52 g/cc			**Gr/ Ep**	
Fiber volume:	53.72 %vol					**Cytec Cycom 5215 T650 6K-135-5HS Fabric**	
Ply count:	8					**[45/-45]2S**	
Test method:	ASTM D3518-94						
		Modulus calculation:	2000 to 6000 microstrain				
Normalized by:	N/A						

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		C0ENX X1XB		C0ENX X1XA		C0ENX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
$F_{12}^{s\ max}$ (ksi)	**Mean**		11.89				
	Minimum		11.39				
	Maximum		12.33				
	C.V.(%)		2.61				
	No. Specimens	21					
	No. Prepreg Lots	3					
$F_{12}^{s5\%\ strain}$ (ksi)	**Mean**		11.46				6.06
	Minimum						5.86
	Maximum						6.49
	C.V.(%)						2.40
	No. Specimens	1				20	
	No. Prepreg Lots	1				3	
$F_{12}^{s0.2\%}$ (ksi)	**Mean**		8.44		6.09		3.61
	Minimum		7.89		5.95		3.52
	Maximum		8.77		6.64		3.79
	C.V.(%)		2.71		2.42		1.73
	No. Specimens	21		20		21	
	No. Prepreg Lots	3		3		3	
G_{12}^{s} (Msi)	**Mean**	0.67		0.56		0.38	
	No. Specimens	21		25		21	
	No. Prepreg Lots	3		3		3	

2.3.6 "25/50/25" Unnotched Tension 1 Properties (UNT1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Tension 1** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [45/0/-45/90]S	
Resin content:	36.74 %wt		**Comp. density:** 1.52 g/cc				
Fiber volume:	53.76 %vol						
Ply count:	8						
Test method:	ASTM D3039-00		**Modulus calculation:** 1000 to 3000 microstrain				
Normalized by:	0.0155	in. CPT					
		CTD		**RTD**		**ETW**	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		C0EAX X1XB		C0EAX X1XA		C0EAX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
UNT1 Strength (ksi)	**Mean**	78.88	79.22	81.67	82.16	84.54	84.42
	Minimum	76.93	76.09	73.80	76.56	82.11	82.15
	Maximum	81.19	81.99	85.30	86.15	88.12	87.66
	C.V.(%)	1.65	2.03	3.32	2.91	1.60	1.73
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	
UNT1 Modulus (Msi)	**Mean**	6.85	6.88	6.47	6.51	6.56	6.55
	Minimum	6.73	6.71	6.15	6.13	6.42	6.40
	Maximum	7.02	7.06	6.74	6.79	6.74	6.73
	C.V.(%)	1.03	1.47	2.23	2.75	1.22	1.13
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	

2.3.7 "10/80/10" Unnotched Tension 2 Properties (UNT2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Tension 2** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/-45/90/45/-45]S**	
Resin content:	36.67 %wt		**Comp. density:** 1.52 g/cc				
Fiber volume:	53.84 %vol						
Ply count:	10						
Test method:	ASTM D3039-08		**Modulus calculation:** 1000 to 3000 microstrain				
Normalized by:	0.0155	in. CPT					
		CTD		**RTD**		**ETW**	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F 85%	
Source code		C0EBX X1XB		C0EBX X1XA		C0EBX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
UNT2 Strength (ksi)	**Mean**	48.49	48.86	47.83	48.18	41.38	41.49
	Minimum	39.94	40.36	46.33	46.20	39.74	39.52
	Maximum	51.41	51.04	49.94	50.22	43.45	43.57
	C.V.(%)	4.73	4.50	1.73	1.95	2.25	2.35
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	
UNT2 Modulus (Msi)	**Mean**	4.44	4.48	4.17	4.21	3.82	3.83
	Minimum	4.34	4.38	3.95	3.95	3.72	3.68
	Maximum	4.53	4.62	4.40	4.42	3.93	3.93
	C.V.(%)	1.22	1.47	3.24	3.18	1.34	1.54
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	

2.3.8 "40/20/40" Unnotched Tension 3 Properties (UNT3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Tension 3**		
Resin content:	36.69 %wt	**Comp. density:**	1.52 g/cc			**Gr/ Ep**		
Fiber volume:	53.78 %vol					**Cytec Cycom 5215 T650 6K-135-5HS Fabric**		
Ply count:	10					**[0/90/45/0/90]S**		
Test method:	ASTM D3039-00	**Modulus calculation:**	1000 to 3000 microstrain					
Normalized by:	0.0155	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		180		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F,85%		
Source code		C0ECX X1XB		C0ECX X1XA		C0ECX X1XM		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
UNT3 Strength (ksi)	**Mean**	101.49	101.66	107.16	107.23	109.12	109.05	
	Minimum	95.73	94.81	98.18	98.75	102.05	100.68	
	Maximum	109.70	109.85	116.71	117.39	113.37	113.65	
	C.V.(%)	3.87	4.09	5.01	5.00	2.60	2.82	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		
UNT3 Modulus (Msi)	**Mean**	8.74	8.75	8.48	8.49	8.55	8.55	
	Minimum	8.46	8.40	8.33	8.21	8.34	8.37	
	Maximum	9.03	9.02	8.81	8.79	8.94	8.89	
	C.V.(%)	1.87	1.75	1.40	1.79	1.66	1.76	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		

2.3.9 "25/50/25" Unnotched Compression 1 Properties (UNC1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Compression 1** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [45/0/-45/90]S	
Resin content:	36.81 %wt		**Comp. density:** 1.52 g/cc				
Fiber volume:	54.41 %vol						
Ply count:	8						
Test method:	ASTM D6641-01e1		**Modulus calculation:** 1000 to 3000 microstrain				
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0EWX X1XA		C0EWX X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
UNC1 Strength (ksi)	**Mean**		71.99	73.45	48.24	48.80	
	Minimum		60.76	62.21	45.73	46.49	
	Maximum		79.97	80.57	51.12	51.24	
	C.V.(%)		7.16	7.11	3.05	2.90	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		
UNC1 Modulus (Msi)	**Mean**		6.28	6.41	6.17	6.21	
	Minimum		5.95	5.93	5.72	5.81	
	Maximum		6.95	7.11	6.60	6.58	
	C.V.(%)		3.42	3.98	3.53	3.34	
	No. Specimens		22		21		
	No. Prepreg Lots		3		3		
ν_{UNC}	**Mean**		0.338		0.365		
	No. Specimens		22		21		
	No. Prepreg Lots		3		3		

2.3.10 "10/80/10" Unnotched Compression 2 Properties (UNC2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Compression 2** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/-45/90/45/-45]S**	
Resin content:	36.45 %wt		**Comp. density:**	1.52 g/cc			
Fiber volume:	54.01 %vol						
Ply count:	10						
Test method:	ASTM D6641-01e1		**Modulus calculation:**	1000 to 3000 microstrain			
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0EXX X1XA		C0EXX X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
UNC2 Strength (ksi)	**Mean**		46.49	47.15	31.89	32.14	
	Minimum		43.53	43.95	28.65	29.95	
	Maximum		50.53	51.22	34.16	34.14	
	C.V.(%)		4.03	3.90	4.16	3.82	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		
UNC2 Modulus (Msi)	**Mean**		3.94	3.99	3.58	3.68	
	Minimum		3.76	3.85	3.50	3.50	
	Maximum		4.16	4.17	4.01	4.03	
	C.V.(%)		2.73	2.44	3.38	3.41	
	No. Specimens		22		21		
	No. Prepreg Lots		3		3		
ν_{UNC}	**Mean**		0.556		0.616		
	No. Specimens		22		21		
	No. Prepreg Lots		3		3		

2.3.11 "40/20/40" Unnotched Compression 3 Properties (UNC3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Unnotched Compression 3** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[0/90/45/0/90]S**	
Resin content:	36.18 %wt	**Comp. density:**	1.52 g/cc				
Fiber volume:	54.36 %vol						
Ply count:	10						
Test method:	ASTM D6641-01e1	**Modulus calculation:**	1000 to 3000 microstrain				
Normalized by:	0.0155	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0EYX X1XA		C0EYX X1XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
UNC3 Strength (ksi)	**Mean**	70.00	71.04	53.58	53.79		
	Minimum	60.73	62.56	49.08	49.67		
	Maximum	77.97	79.41	57.06	57.20		
	C.V.(%)	6.29	6.12	4.42	4.21		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			
UNC3 Modulus (Msi)	**Mean**	7.83	7.95	8.00	7.99		
	Minimum	7.51	7.71	7.52	7.49		
	Maximum	8.13	8.30	8.55	8.50		
	C.V.(%)	1.88	1.77	3.91	3.73		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			
ν_{UNC}	**Mean**	0.137		0.134			
	No. Specimens	21		20			
	No. Prepreg Lots	3		3			

2.3.12 Lamina Short-Beam Strength Properties (SBS)

Material: Cytec Cycom 5215 T650 6K-135-5HS Fabric

Resin content: 36.71 %wt **Comp. dens** 1.52 g/cc
Fiber volume: 53.81 %vol
Ply count: 17

Test method: ASTM D2344-00

Normalized by: NA

Short Beam Strength
Gr/ Ep
Cytec Cycom 5215 T650 6K-135-5HS Fabric
[0]17

		CTD		RTD		ETD		ETW	
Test Temperature [°F]		-65		70		180		180	
Moisture Conditioning		dry		dry		dry		equilibrium	
Equilibrium at T, RH								160 F,85%	
Source code		C0EQX X1XB		C0EQX X1XA		C0EQX X1XL		C0EQX X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
SBS Strength (ksi)	**Mean**		9.25		9.26		7.79		6.42
	Minimum		8.47		8.57		7.56		6.12
	Maximum		10.62		9.94		8.05		6.70
	C.V.(%)		6.48		4.10		1.69		2.50
	No. Specimens	22		21		21		22	
	No. Prepreg Lots	3		3		3		3	

2.3.13 Laminate Short-Beam Strength Properties (SBS1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric				**Laminate Short Beam Strength**		
Resin content:	see FHC1	**Comp. density:**	see FHC1		**Gr/ Ep**		
Fiber volume:	see FHC1				**Cytec Cycom 5215 T650 6K-135 5HS Fabric**		
Ply count:	12				**[45/0/-45/90/-45/90]S**		
Test method:	ASTM D2344-00						
Normalized by:	NA						
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0EqX X7XA		C0EqX X7XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
	Mean		7.89		5.75		
	Minimum		7.09		5.58		
	Maximum		8.57		5.90		
LSBS (ksi)	**C.V.(%)**		4.84		1.59		
	No. Specimens		22		21		
	No. Prepreg Lots		3		3		

2.3.14 "25/50/25" Open-Hole Tension 1 Properties (OHT1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Open Hole Tension 1** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/0/-45/90]S**		
Resin content:	36.52 %wt		**Comp. density:** 1.52 g/cc					
Fiber volume:	53.98 %vol							
Ply count:	8							
Test method:	ASTM D5766-02a							
Normalized by:	0.0155	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		180		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F-85%		
Source code		C0EDX X1XB		C0EDX X1XA		C0EDX X1XM		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
OHT1 Strength (ksi)	**Mean**	48.33	48.62	51.14	51.51	55.93	55.98	
	Minimum	45.51	45.90	48.52	48.59	53.70	53.64	
	Maximum	50.58	50.93	54.00	53.96	60.07	60.12	
	C.V.(%)	2.90	3.20	2.85	2.98	2.50	2.40	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		

2.3.15 "10/80/10" Open-Hole Tension 2 Properties (OHT2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Open Hole Tension 2**		
						Gr/ Ep		
Resin content:	36.51 %wt		**Comp. density:** 1.52 g/cc			**Cytec Cycom 5215 T650 6K-135-5HS Fabric**		
Fiber volume:	53.93 %vol					**[45/-45/90/45/-45]S**		
Ply count:	10							
Test method:	ASTM D5766-02a							
Normalized by:	0.0155	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		180		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F-85%		
Source code		C0EEX X1XB		C0EEX X1XA		C0EEX X1XM		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
OHT2 Strength (ksi)	**Mean**	36.08	36.16	34.89	34.93	32.23	32.23	
	Minimum	33.83	34.60	32.79	33.83	31.22	30.79	
	Maximum	37.43	37.67	36.14	36.27	33.18	33.15	
	C.V.(%)	2.49	2.42	2.55	2.30	1.73	1.86	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		

2.3.16 "40/20/40" Open-Hole Tension 3 Properties (OHT3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Open Hole Tension 3**		
Resin content:	36.29 %wt		**Comp. density:** 1.52 g/cc			**Gr/ Ep**		
Fiber volume:	54.21 %vol					**Cytec Cycom 5215 T650 6K-135-5HS Fabric**		
Ply count:	10					**[0/90/45/0/90]S**		
Test method:	ASTM D5766-02a							
Normalized by:	0.0155	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		180		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F,85%		
Source code		C0EFX X1XB		C0EFX X1XA		C0EFX X1XM		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
OHT3 Strength (ksi)	**Mean**	61.72	62.46	66.56	66.97	74.63	75.32	
	Minimum	54.88	56.13	61.82	61.78	70.77	70.71	
	Maximum	67.54	68.79	73.48	74.69	79.63	81.62	
	C.V.(%)	4.35	4.50	4.62	4.95	3.20	3.84	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		

2.3.17 "25/50/25" Filled-Hole Tension 1 Properties (FHT1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Filled Hole Tension 1** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/0/-45/90]S**	
Resin content:	36.57 %wt	**Comp. density:**	1.52 g/cc				
Fiber volume:	53.89 %vol						
Ply count:	8						
Test method:	ASTM D6742-02						
Normalized by:	0.0155	in. CPT					
		CTD		**RTD**		**ETW**	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F,85%	
Source code		C0E4X X1XB		C0E4X X1XA		C0E4X X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
FHT1 Strength (ksi)	**Mean**	52.12	52.25	53.42	53.27	54.34	54.29
	Minimum	49.87	49.96	50.88	50.29	52.30	52.37
	Maximum	56.43	55.99	56.45	56.41	56.20	56.13
	C.V.(%)	3.21	3.12	2.69	3.01	1.92	2.01
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	

2.3.18 "10/80/10" Filled-Hole Tension 2 Properties (FHT2)

Material: Cytec Cycom 5215 T650-6K-135-5HS Fabric

Resin content: 36.57 %wt **Comp. density:** 1.52 g/cc
Fiber volume: 53.95 %vol
Ply count: 10

Test method: ASTM D6742-02

Normalized by: 0.0155 in. CPT

Filled Hole Tension Layup 2
Gr/ Ep
Cytec Cycom 5215 T650 6K-135-5HS Fabric
[45/-45/90/45/-45]S

		CTD		RTD		ETW	
Test Temperature [°F]		-65		70		180	
Moisture Conditioning		dry		dry		equilibrium	
Equilibrium at T, RH						160 F 85%	
Source code		C0E5X X1XB		C0E5X X1XA		C0E5X X1XM	
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
FHT2 Strength (ksi)	**Mean**	41.62	41.80	39.30	39.36	32.73	32.76
	Minimum	39.18	39.36	37.79	38.18	31.77	31.91
	Maximum	43.76	44.18	40.40	40.51	33.65	33.75
	C.V.(%)	2.72	2.81	1.76	1.66	1.49	1.63
	No. Specimens	21		21		21	
	No. Prepreg Lots	3		3		3	

2.3.19 "40/20/40" Filled-Hole Tension 3 Properties (FHT3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Filled Hole Tension 3** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [0/90/45/0/90]S		
Resin content:	36.36 %wt		**Comp. density:**	1.52 g/cc				
Fiber volume:	54.13 %vol							
Ply count:	10							
Test method:	ASTM D6742-02							
Normalized by:	0.0155	in. CPT						
		CTD		**RTD**		**ETW**		
Test Temperature [°F]		-65		70		180		
Moisture Conditioning		dry		dry		equilibrium		
Equilibrium at T, RH						160 F,85%		
Source code		C0E6X X1XB		C0E6X X1XA		C0E6X X1XM		
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**	
FHT3 Strength (ksi)	**Mean**	60.34	60.69	63.00	63.27	67.27	67.51	
	Minimum	54.54	54.97	57.87	57.88	61.29	63.17	
	Maximum	63.57	63.98	68.94	70.31	71.87	70.55	
	C.V.(%)	4.16	4.09	5.53	5.43	3.87	2.88	
	No. Specimens	21		21		21		
	No. Prepreg Lots	3		3		3		

2.3.20 "25/50/25" Open-Hole Compression 1 Properties (OHC1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Open Hole Compression 1** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/0/-45/90/-45/90]S**			
Resin content:	36.53 %wt	**Comp. density:**	1.52 g/cc				
Fiber volume:	53.89 %vol						
Ply count:	12						
Test method:	ASTM D6484-04						
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0EGX X1XA		C0EGX X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
OHC1 Strength (ksi)	**Mean**		41.38	41.66	32.77	32.95	
	Minimum		39.82	40.09	31.26	31.48	
	Maximum		42.74	43.32	34.86	35.39	
	C.V.(%)		2.29	2.41	3.16	3.36	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.21 "10/80/10" Open-Hole Compression 2 Properties (OHC2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Open Hole Compression 2**			
				Gr/ Ep			
Resin content:	36.32 %wt	**Comp. density:**	1.52 g/cc	**Cytec Cycom 5215 T650 6K-135-5HS Fabric**			
Fiber volume:	54.15 %vol			**[45/-45/90/45/-45]S**			
Ply count:	10						
Test method:	ASTM D6484-04						
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0EHX X1XA		C0EHX X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
OHC2 Strength (ksi)	**Mean**		31.85	31.88	23.57	23.58	
	Minimum		30.43	30.57	22.39	22.44	
	Maximum		33.99	33.73	25.02	24.95	
	C.V.(%)		2.71	2.69	3.95	3.69	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.22 "40/20/40" Open-Hole Compression 3 Properties (OHC3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Open Hole Compression 3**			
				Gr/ Ep			
Resin content:	36.57 %wt	**Comp. density:**	1.52 g/cc	**Cytec Cycom 5215 T650 6K-135-5HS Fabric**			
Fiber volume:	53.91 %vol			**[0/90/45/0/90]S**			
Ply count:	10						
Test method:	ASTM D6484-04						
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0EIX X1XA		C0EIX X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
OHC3 Strength (ksi)	**Mean**		45.17	45.26	34.64	34.80	
	Minimum		41.31	40.89	31.50	31.70	
	Maximum		53.16	53.14	37.99	39.22	
	C.V.(%)		6.68	7.30	5.25	5.48	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.23 "25/50/25" Filled-Hole Compression 1 Properties (FHC1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Filled Hole Compression 1** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/0/-45/90/-45/90]S**			
Resin content:	36.53 %wt	**Comp. density:**	1.52 g/cc				
Fiber volume:	54.01 %vol						
Ply count:	12						
Test method:	ASTM D6742-02						
Normalized by:	0.0155	in. CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0E7X X1XA		C0E7X X1XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
FHC1 Strength (ksi)	**Mean**	63.96	64.17	45.73	45.91		
	Minimum	61.07	61.29	42.39	42.43		
	Maximum	69.43	69.74	48.36	48.58		
	C.V.(%)	3.28	3.49	4.07	4.26		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			

2.3.24 "10/80/10" Filled-Hole Compression 2 Properties (FHC2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Filled Hole Compression 2**			
				Gr/ Ep			
Resin content:	36.75 %wt	**Comp. density:**	1.52 g/cc	**Cytec Cycom 5215 T650 6K-135-5HS Fabric**			
Fiber volume:	53.76 %vol			**[45/-45/90/45/-45]S**			
Ply count:	10						
Test method:	ASTM D6742-02						
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0E8X X1XA		C0E8X X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
FHC2 Strength (ksi)	**Mean**		45.55	45.48	33.12	33.10	
	Minimum		42.47	42.51	30.14	30.08	
	Maximum		47.60	47.34	35.51	35.22	
	C.V.(%)		3.32	3.10	4.00	4.09	
	No. Specimens		21		21		
	No. Prepreg Lots		3		3		

2.3.25 "40/20/40" Filled-Hole Compression 3 Properties (FHC3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric			**Filled Hole Compression 3**			
				Gr/ Ep			
Resin content:	36.67 %wt	**Comp. density:** 1.52 g/cc		**Cytec Cycom 5215 T650 6K-135-5HS Fabric**			
Fiber volume:	53.85 %vol			**[0/90/45/0/90]S**			
Ply count:	10						
Test method:	ASTM D6742-02						
Normalized by:	0.0155	in. CPT					
			RTD		**ETW**		
Test Temperature [°F]			70		180		
Moisture Conditioning			dry		equilibrium		
Equilibrium at T, RH					160 F,85%		
Source code			C0E9X X1XA		C0E9X X1XM		
			Normalized	**Measured**	**Normalized**	**Measured**	
FHC3 Strength (ksi)	**Mean**		66.37	66.06	48.97	48.82	
	Minimum		61.50	60.62	43.91	43.30	
	Maximum		72.23	72.33	52.11	52.36	
	C.V.(%)		4.35	4.45	4.51	4.86	
	No. Specimens		23		21		
	No. Prepreg Lots		3		3		

2.3.26 "25/50/25" Single-Shear Bearing 1 Properties (SSB1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric				**Single Shear Bearing 1** **Gr/ Ep** **Cytec Cycom 5215 T650 6K-135-5HS Fabric** **[45/0/-45/90]S**		
Resin content:	35.72 %wt	**Comp. density:** 1.52 g/cc					
Fiber volume:	54.82 %vol						
Ply count:	8						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0155	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0E1X X1XA		C0E1X X1XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
SSB1 Ultimate Strength (ksi)	**Mean**	107.71	110.35	89.75	90.76		
	Minimum	99.82	102.50	84.22	85.07		
	Maximum	116.03	118.35	93.70	94.40		
	C.V.(%)	3.94	3.68	3.07	3.21		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			
SSB1 2% Offset Strength (ksi)	**Mean**	88.74	90.90	76.89	77.74		
	Minimum	81.66	85.17	69.84	70.51		
	Maximum	96.45	98.65	84.15	84.01		
	C.V.(%)	4.59	4.21	5.16	4.93		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			

2.3.27 "10/80/10" Single-Shear Bearing 2 Properties (SSB2)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Single Shear Bearing 2** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [45/-45/90/-45/45]	
Resin content:	35.46 %wt	**Comp. density:**	1.53 g/cc				
Fiber volume:	55.09 %vol						
Ply count:	5						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0155	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0E2X X1XA		C0E2X X1XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
SSB2 Ultimate Strength (ksi)	**Mean**	102.22	103.80	86.00	86.44		
	Minimum	90.03	91.67	78.24	79.06		
	Maximum	112.00	112.16	95.63	94.85		
	C.V.(%)	4.95	4.56	4.97	4.51		
	No. Specimens	25		21			
	No. Prepreg Lots	3		3			
SSB2 2% Offset Strength (ksi)	**Mean**	88.22	89.55	69.43	69.78		
	Minimum	67.89	69.13	63.10	64.29		
	Maximum	106.39	104.95	77.94	77.16		
	C.V.(%)	9.43	8.81	5.77	5.37		
	No. Specimens	25		21			
	No. Prepreg Lots	3		3			

2.3.28 "40/20/40" Single-Shear Bearing 3 Properties (SSB3)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Single Shear Bearing 3** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [0/90/45/90/0]	
Resin content:	35.70 %wt	**Comp. density:** 1.52 g/cc					
Fiber volume:	54.84 %vol						
Ply count:	5						
Test method:	ASTM D5961-05e1						
Normalized by:	0.0155	in CPT					
		RTD		**ETW**			
Test Temperature [°F]		70		180			
Moisture Conditioning		dry		equilibrium			
Equilibrium at T, RH				160 F,85%			
Source code		C0E3X X1XA		C0E3X X1XM			
		Normalized	**Measured**	**Normalized**	**Measured**		
SSB3 Ultimate Strength (ksi)	**Mean**	95.10	97.42	80.64	80.71		
	Minimum	89.11	90.61	73.75	75.23		
	Maximum	101.04	103.33	86.60	87.52		
	C.V.(%)	3.84	3.88	4.23	4.13		
	No. Specimens	21		21			
	No. Prepreg Lots	3		3			
SSB3 2% Offset Strength (ksi)	**Mean**	84.40	86.44	67.84	67.90		
	Minimum	75.37	76.76	58.74	57.82		
	Maximum	97.76	101.54	82.25	81.58		
	C.V.(%)	6.30	6.32	9.47	9.40		
	No. Specimens	19		21			
	No. Prepreg Lots	3		3			

2.3.29 Compression After Impact 1 Properties (CAI1)

Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric					**Compression After Impact Layup 1** Gr/ Ep Cytec Cycom 5215 T650 6K-135-5HS Fabric [45/0/-45/90/-45/90]S	
Resin content:	36.77 %wt		**Comp. density:** 1.52 g/cc				
Fiber volume:	53.62 %vol						
Ply count:	12						
Test method:	ASTM D7136/D7137-05e1						
Normalized by:	0.0155	in. CPT					
			RTD				
Test Temperature [°F]			70				
Moisture Conditioning			dry				
Equilibrium at T, RH							
Source code			C0EKX X1XA				
			Normalized	**Measured**			
CAI Strength (ksi)	**Mean**		25.26	25.43			
	Minimum		24.48	24.79			
	Maximum		26.25	26.35			
	C.V.(%)		2.22	1.85			
	No. Specimens		14				
	No. Prepreg Lots		1				

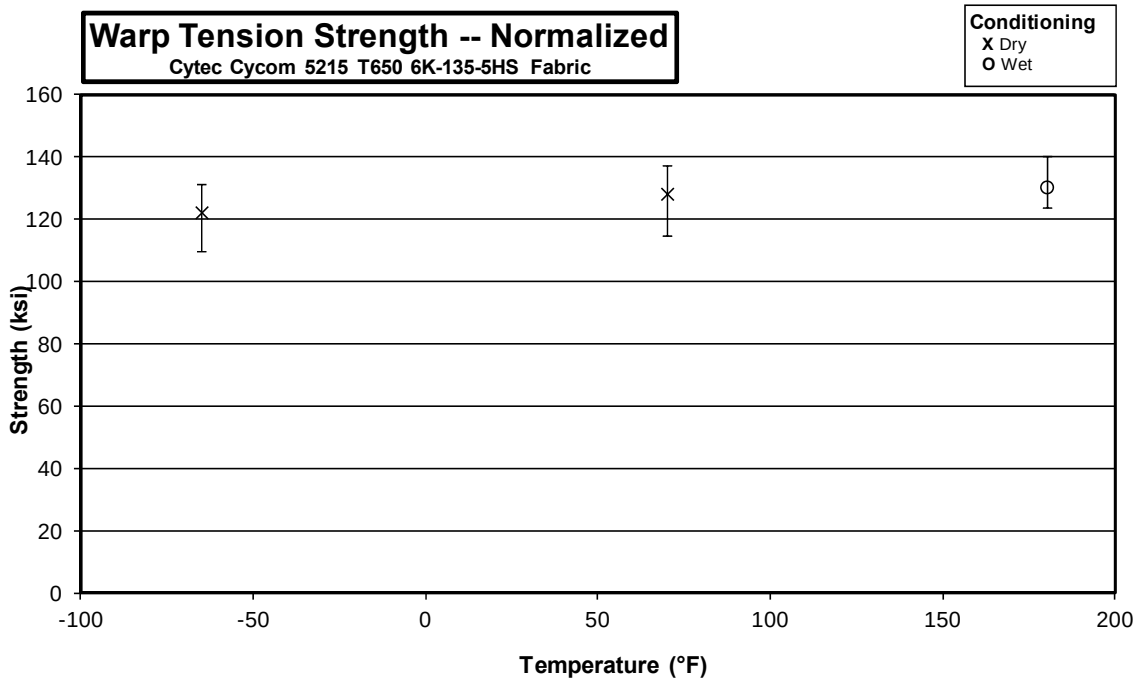
2.3.30 Interlaminar Tension Properties (ILT)

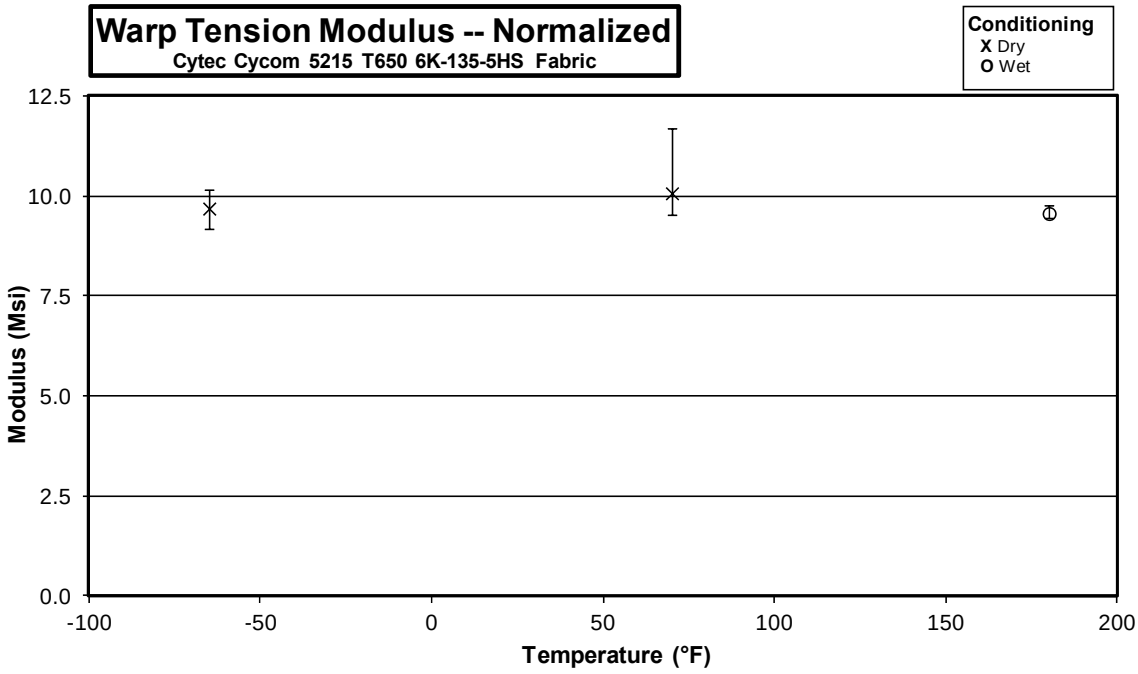
Material:	Cytec Cycom 5215 T650 6K-135-5HS Fabric				**Interlaminar Tension Layup 1**	
Resin content:	NA	**Comp. density** NA			**Gr/ Ep**	
Fiber volume:	NA				**Cytec Cycom 5215 T650 6K-135-5HS Fabric**	
Ply count:	11				**[0]11**	
Test method:	ASTM D6415-06ae1					
Normalized by:	NA					
		CTD		**RTD**		**ETW**
Test Temperature [°F]		-65		70		180
Moisture Conditioning		dry		dry		equilibrium
Equilibrium at T, RH						160 F 85%
Source code		C0EMX X1XB		C0EMX X1XA		C0EMX X1XM
		Normalized	**Measured**	**Normalized**	**Measured**	**Normalized**	**Measured**
ILT Strength (ksi)	**Mean**		5.95		3.92		3.01
	Minimum		5.14		2.36		2.38
	Maximum		7.09		5.48		3.76
	C.V.(%)		11.27		33.36		20.44
	No. Specimens		6		6		6
	No. Prepreg Lots		1		1		1

3. Individual Test Charts

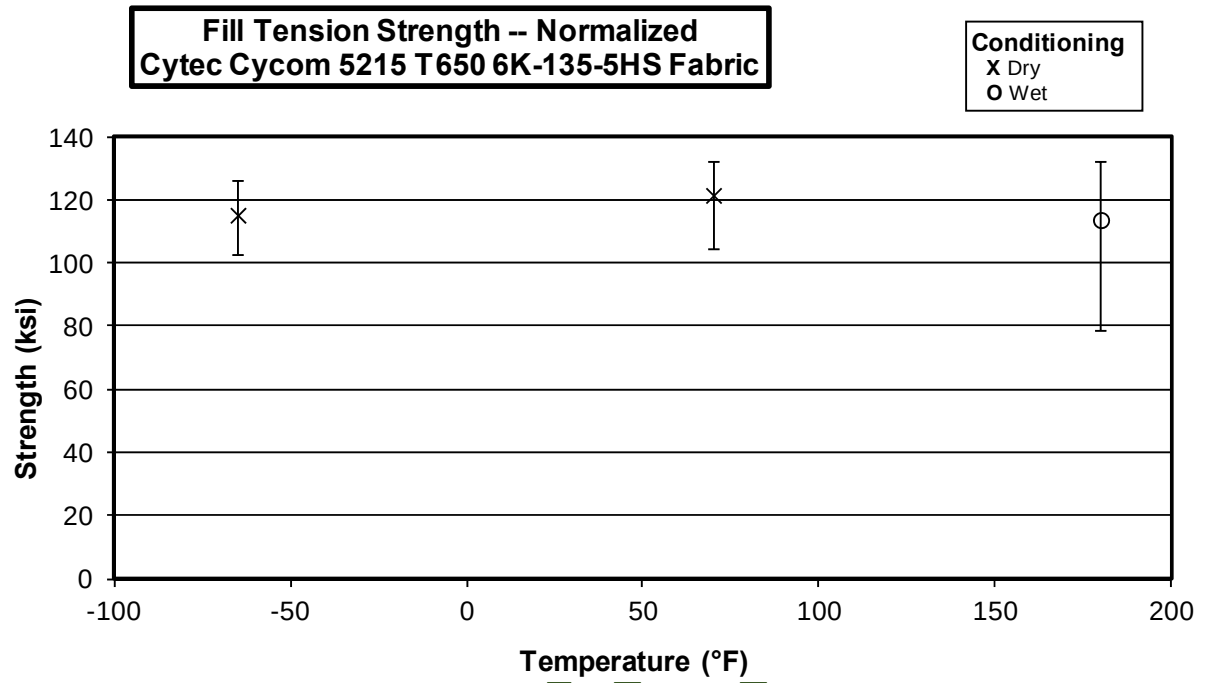
These charts combine all three batches of data and plot the minimum and maximum modulus and strength range based on the test temperature.

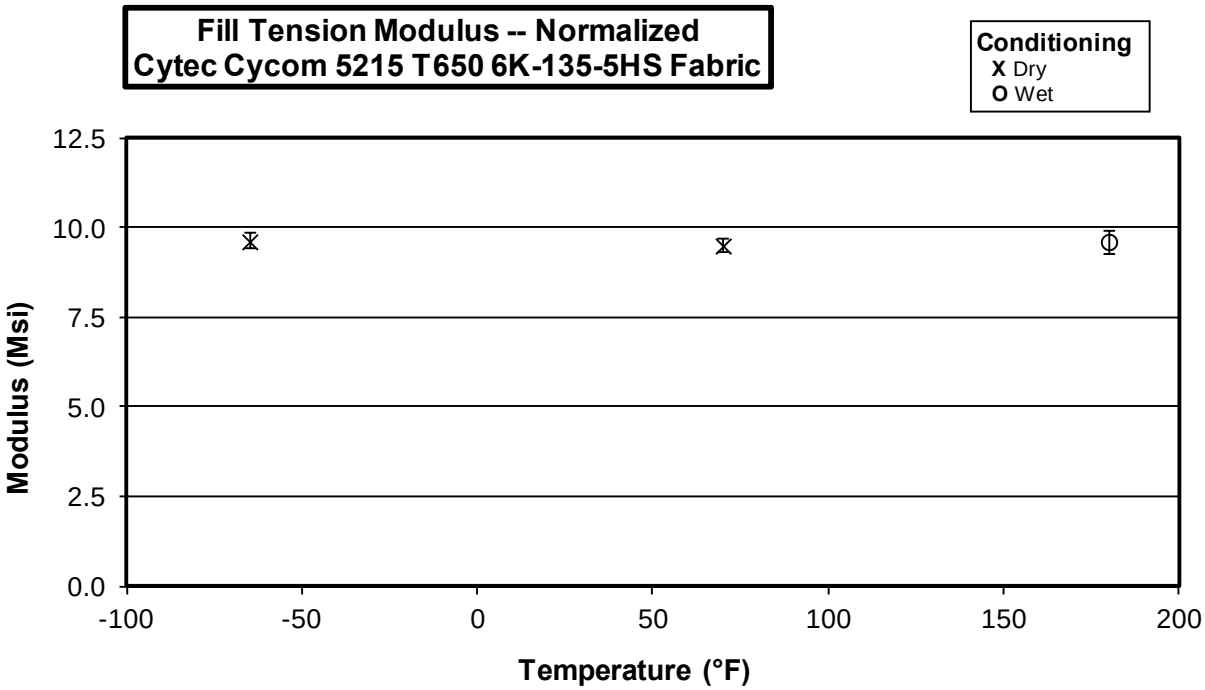
3.1 Warp Tension Properties (WT)



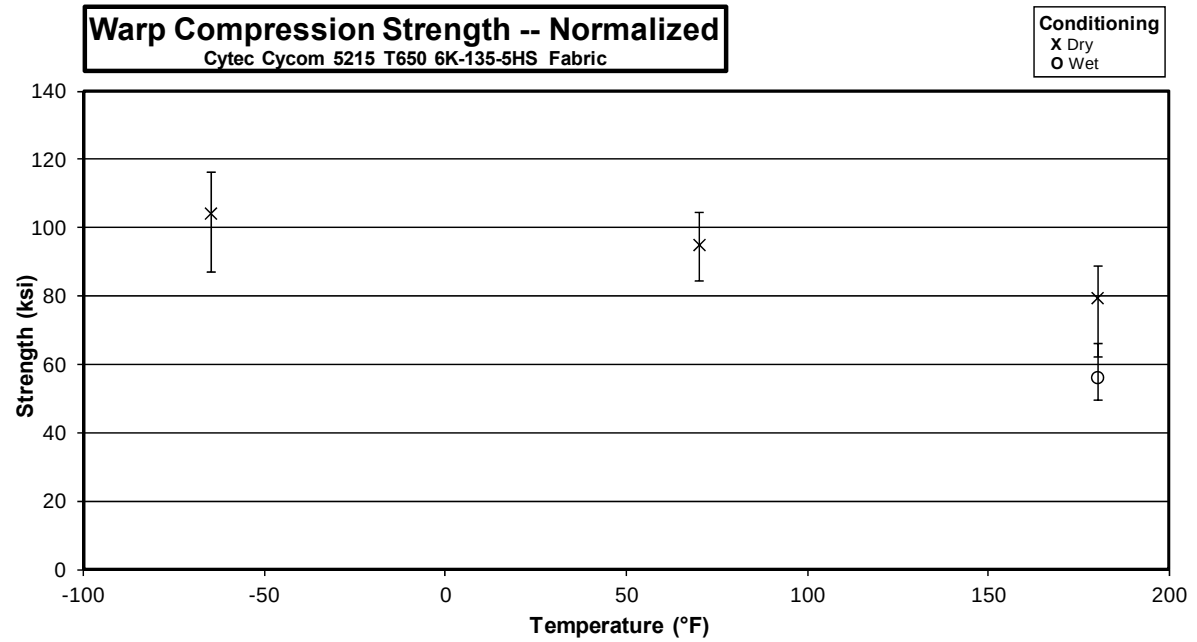


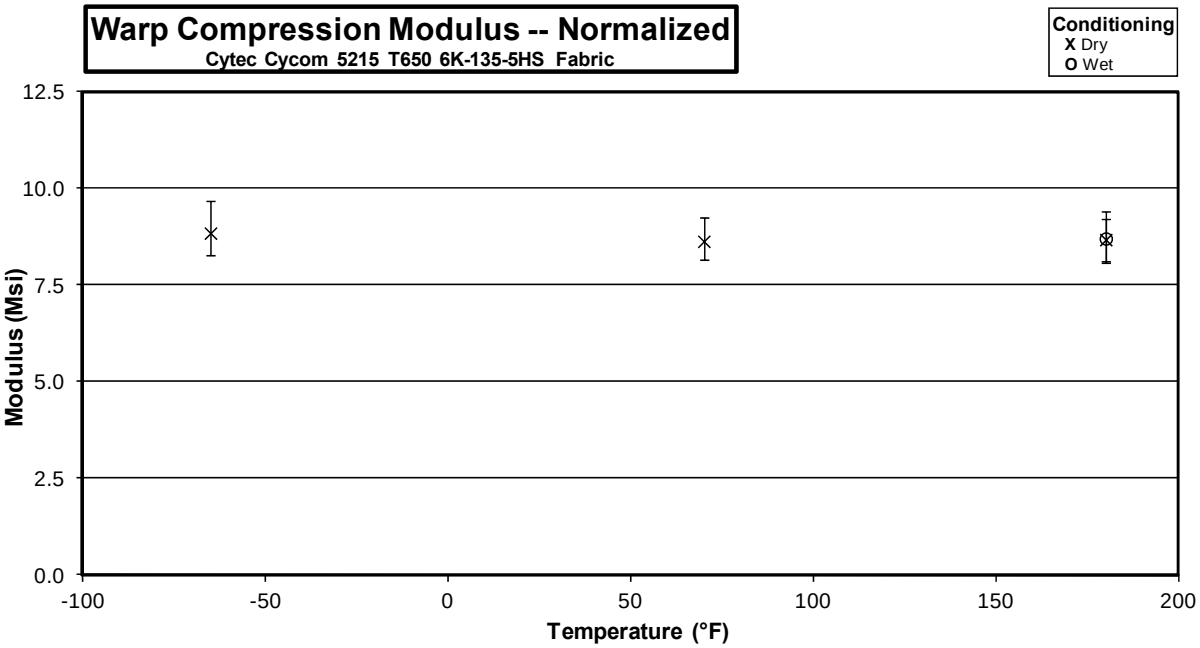
3.2 Fill Tension Properties (FT)



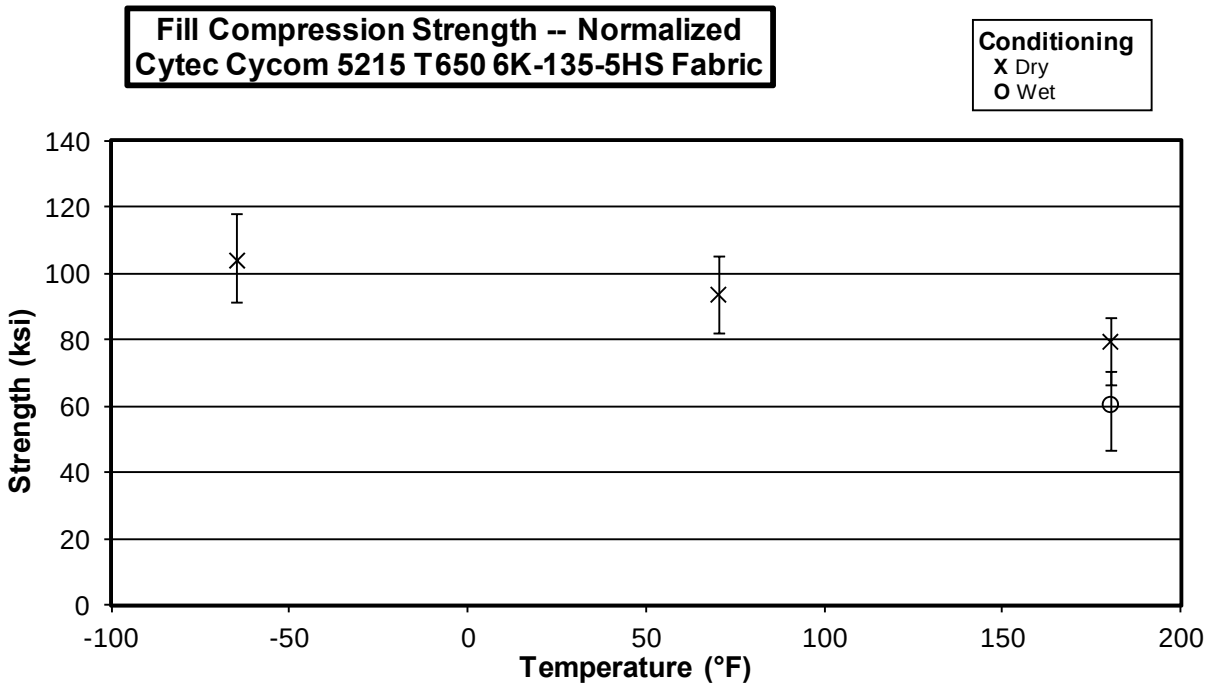


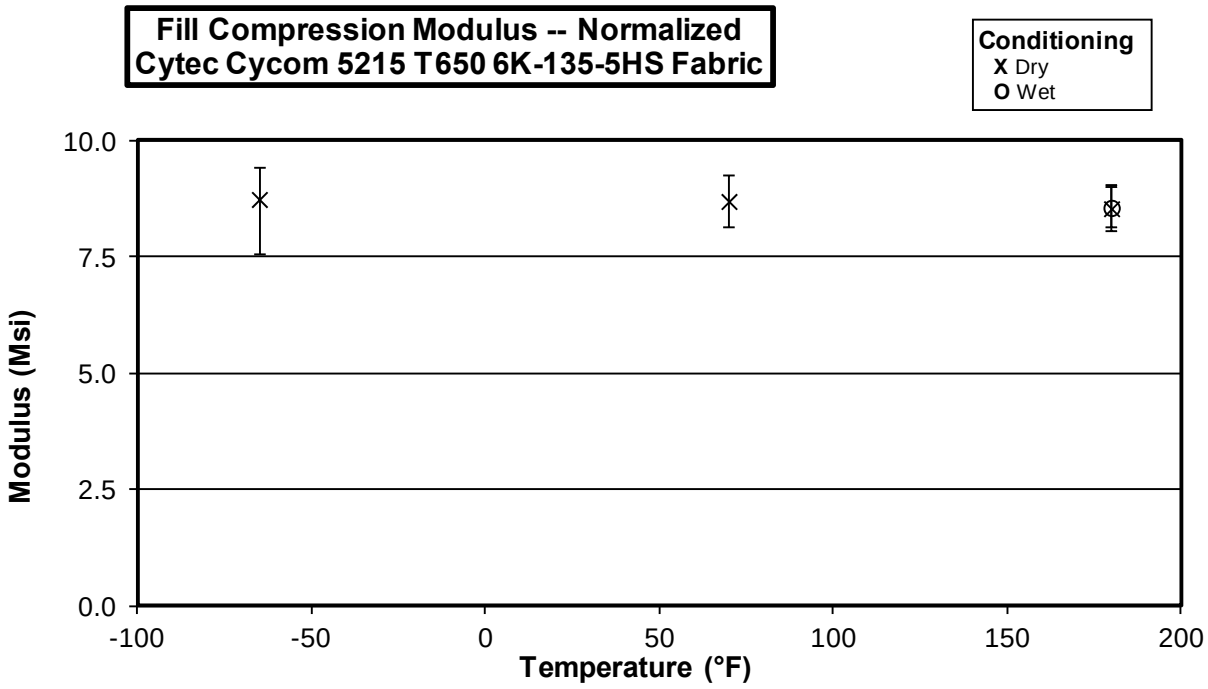
3.3 Warp Compression Properties (WC)



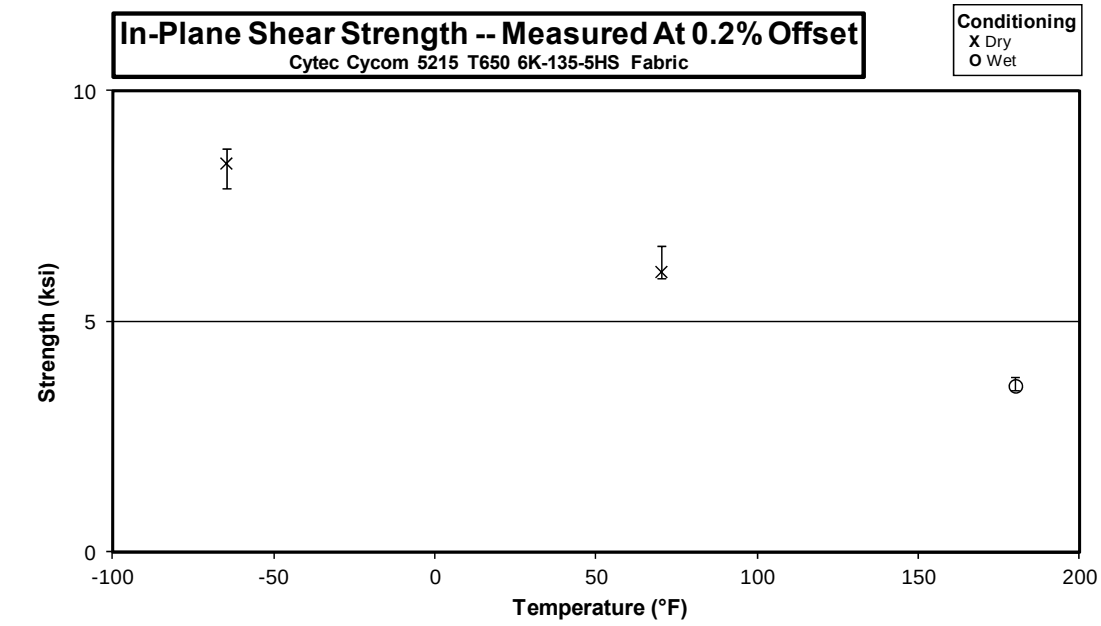


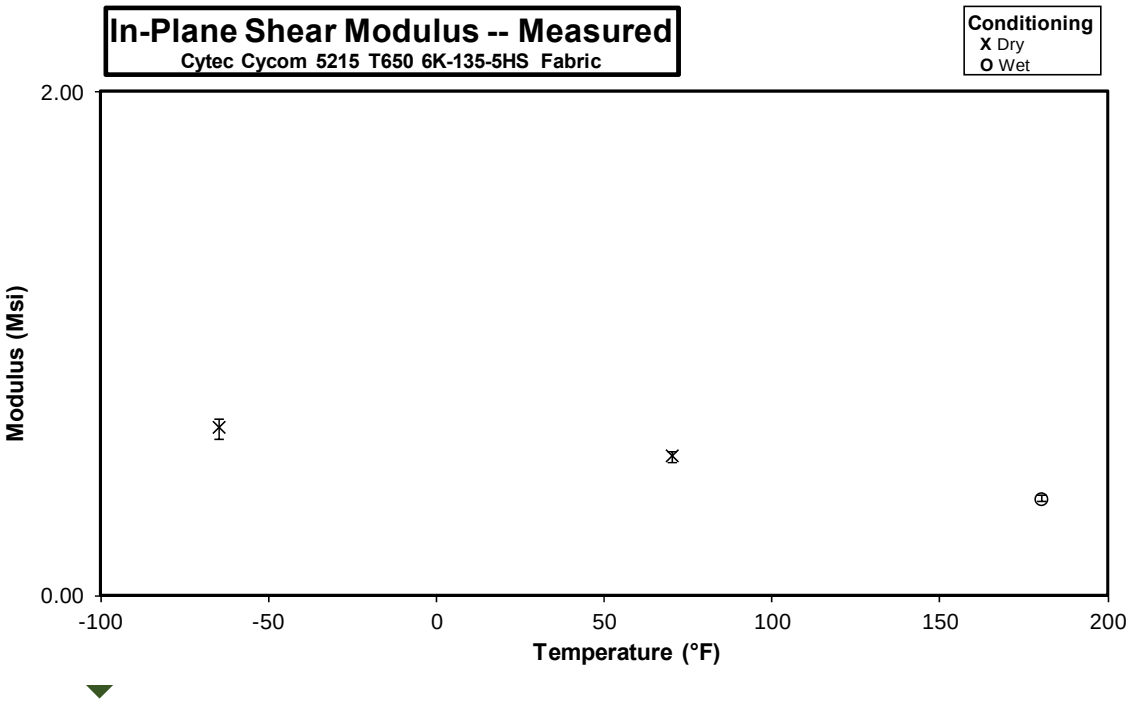
3.4 Fill Compression Properties (FC)



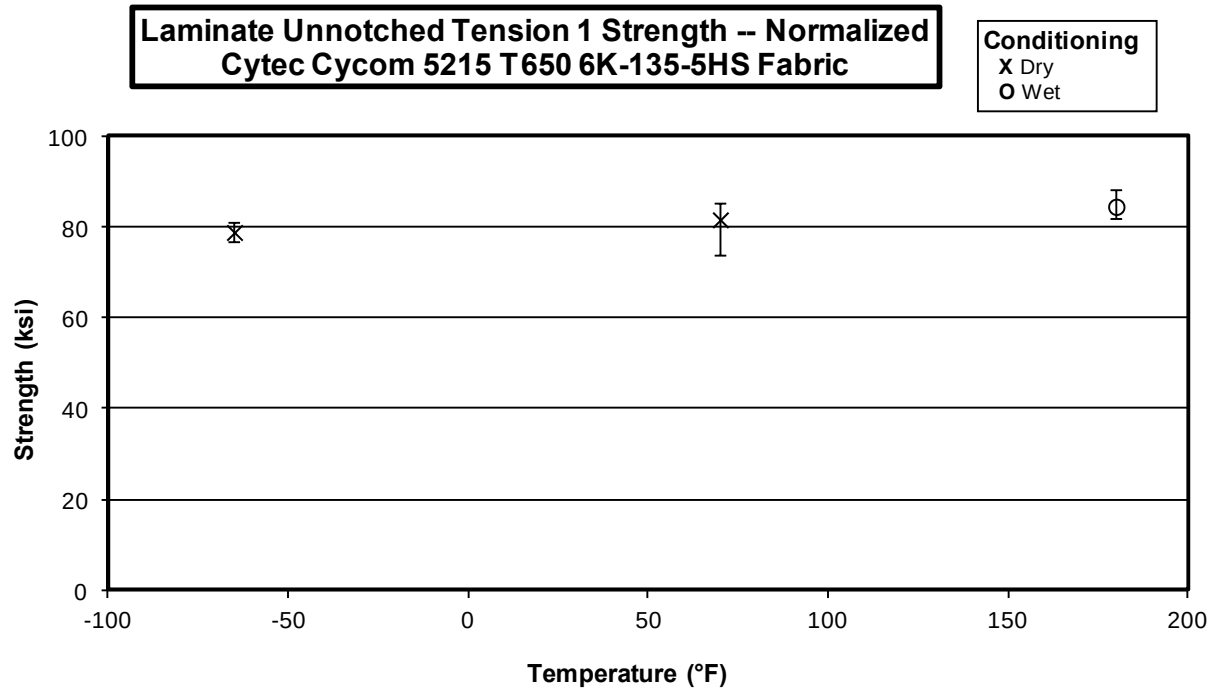


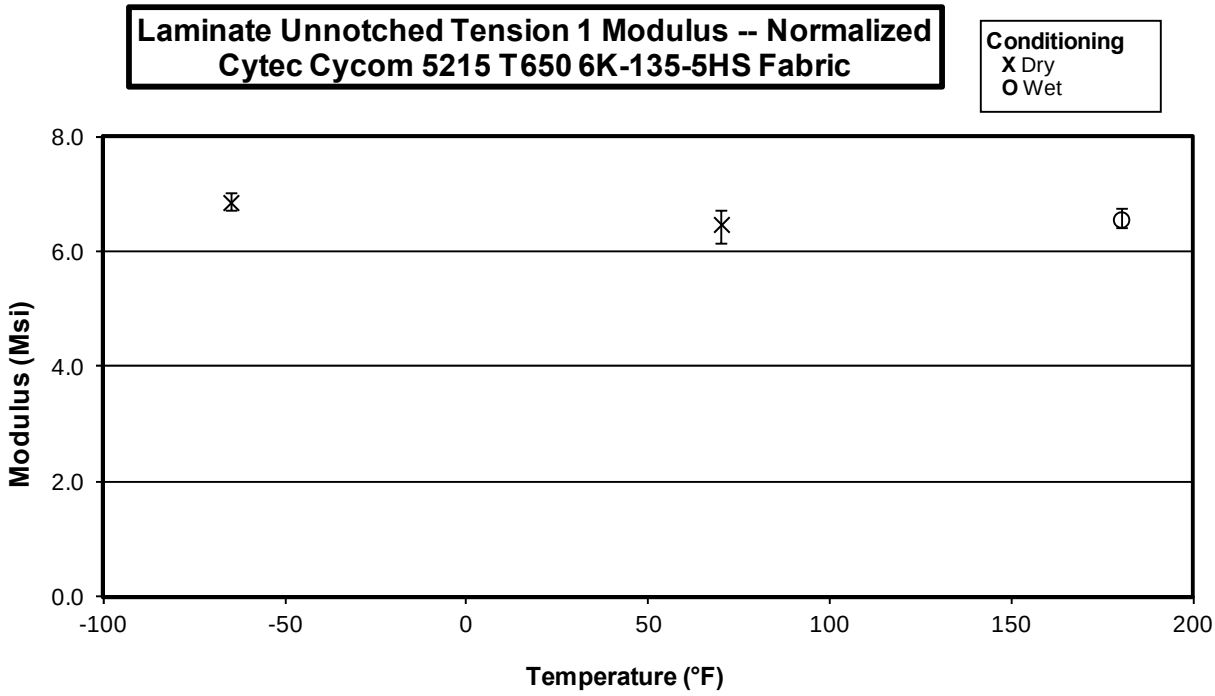
3.5 In-Plane Shear Properties (IPS)



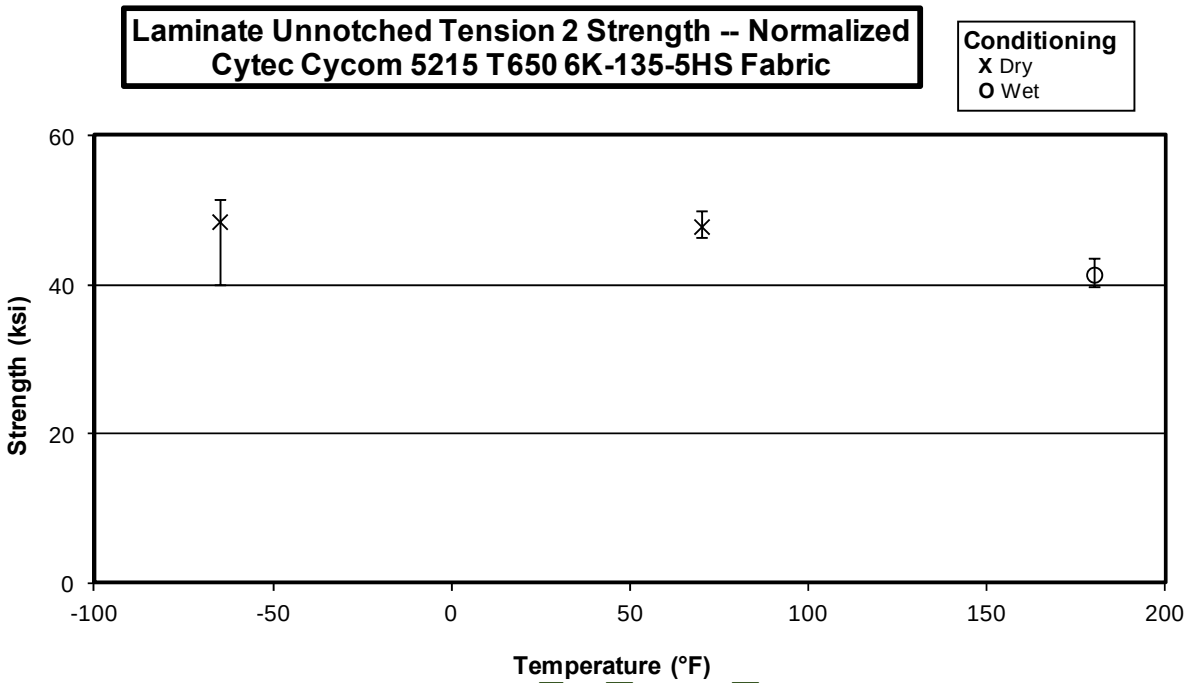


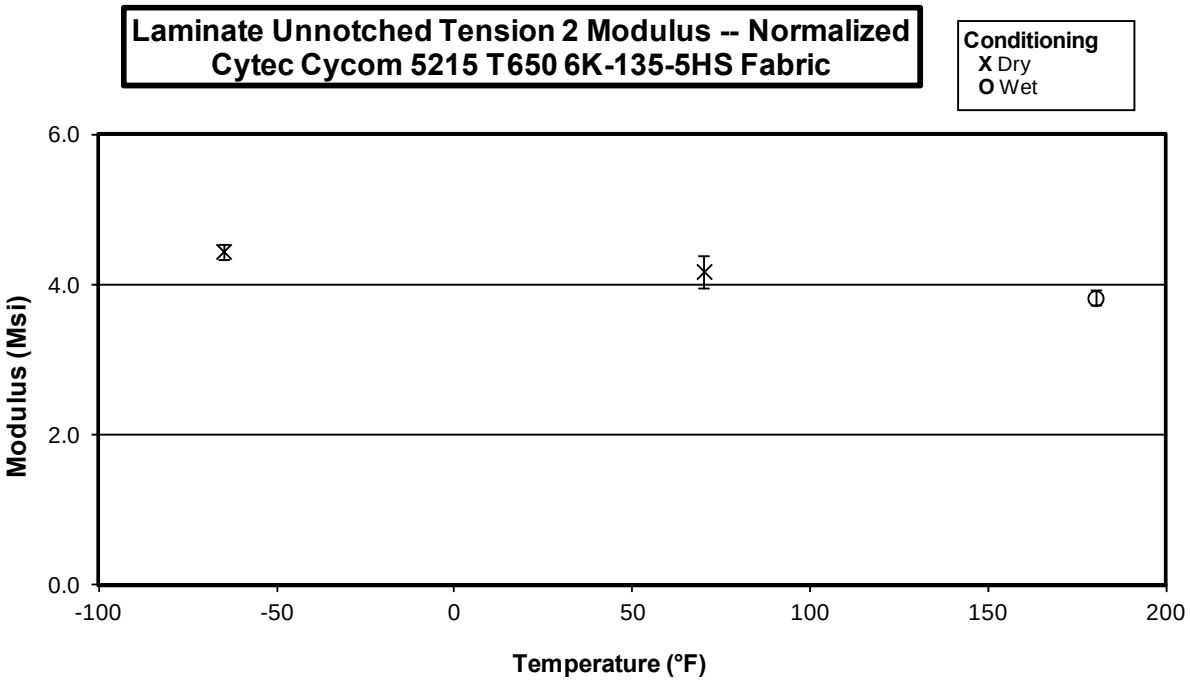
3.6 "25/50/25" Unnotched Tension 1 Properties (UNT1)



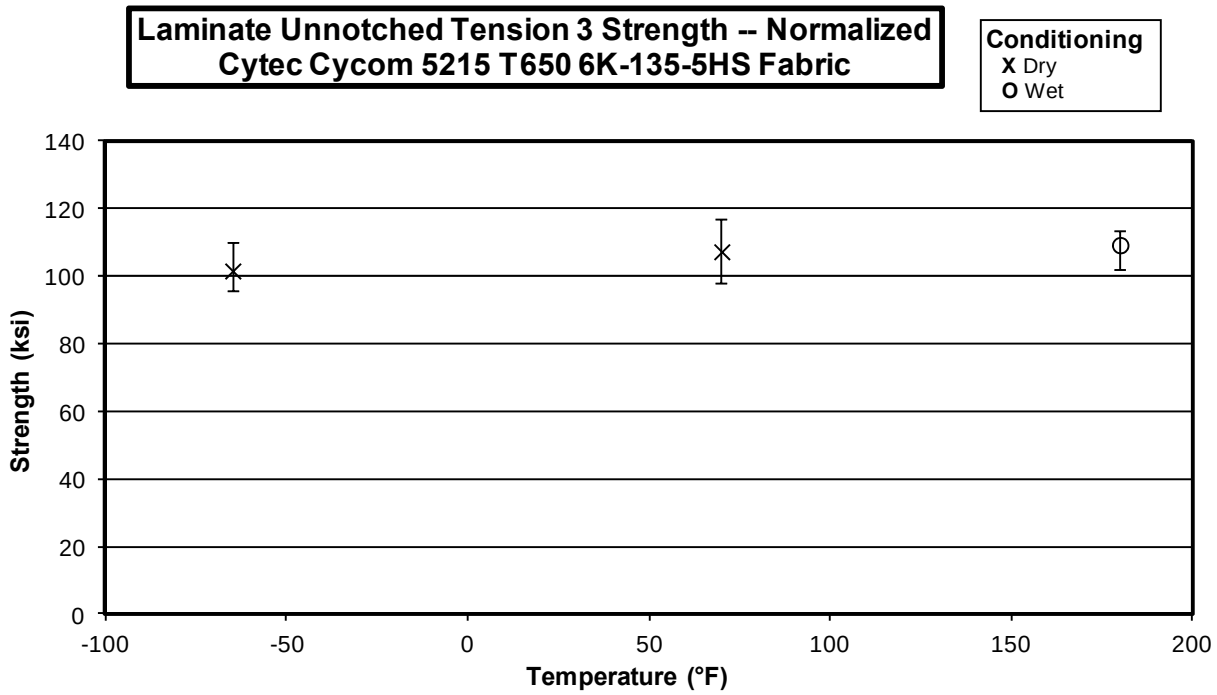


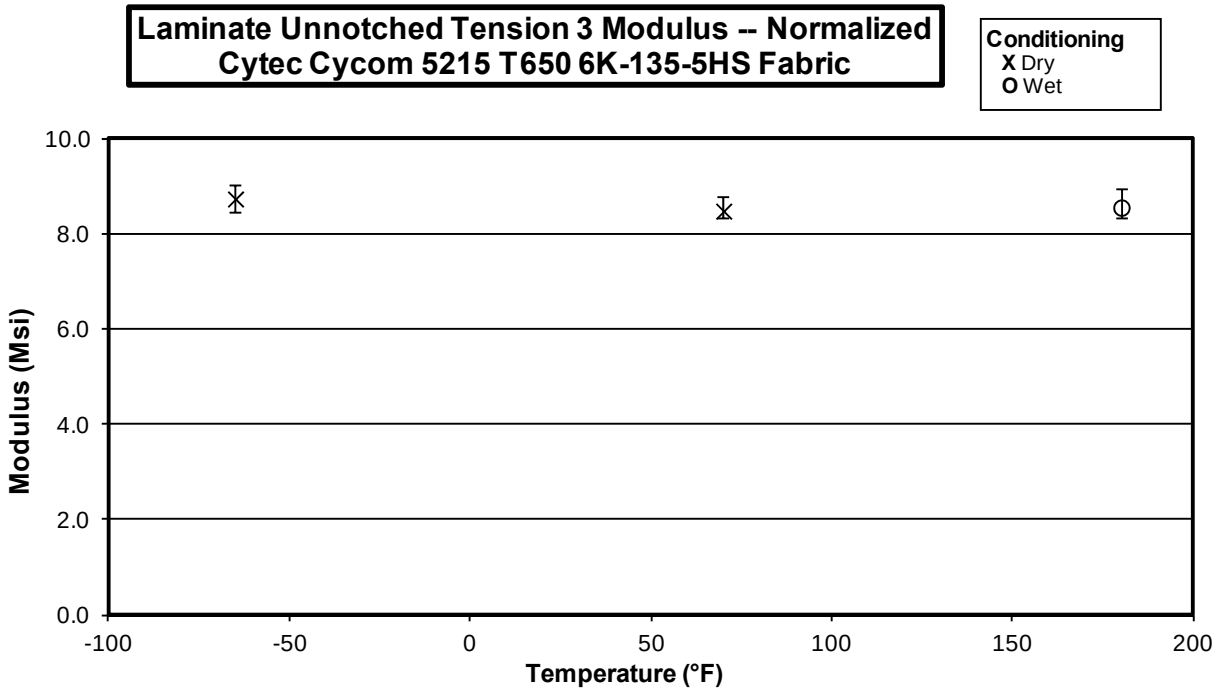
3.7 "10/80/10" Unnotched Tension 2 Properties (UNT2)



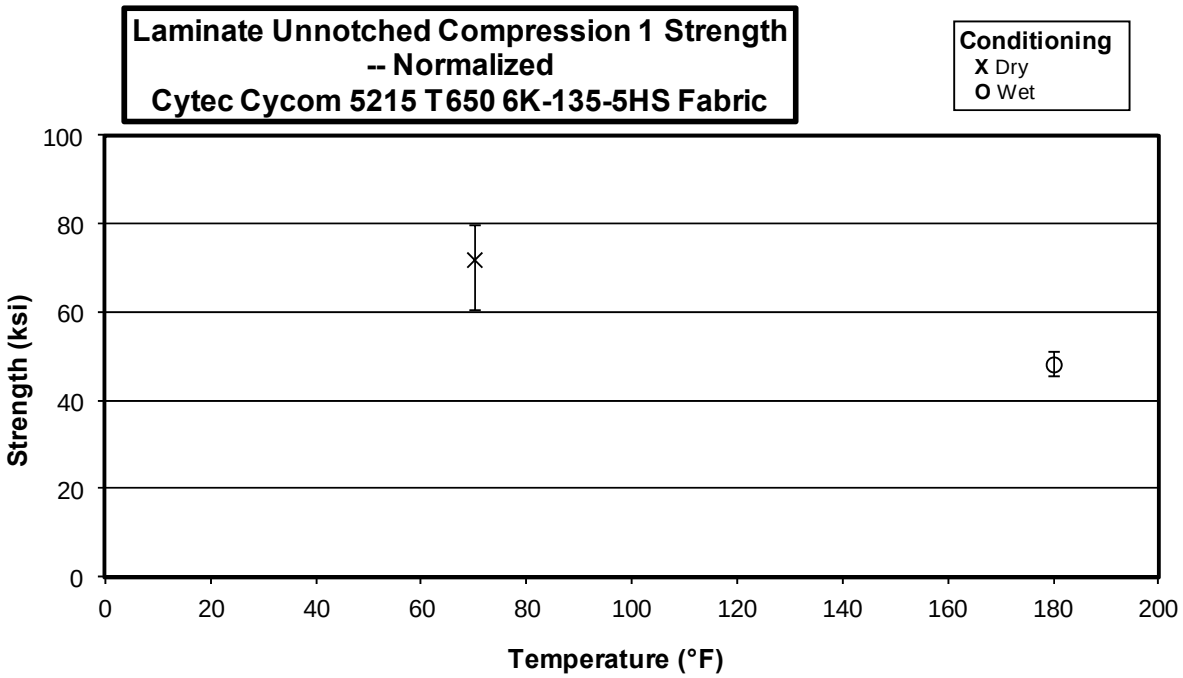


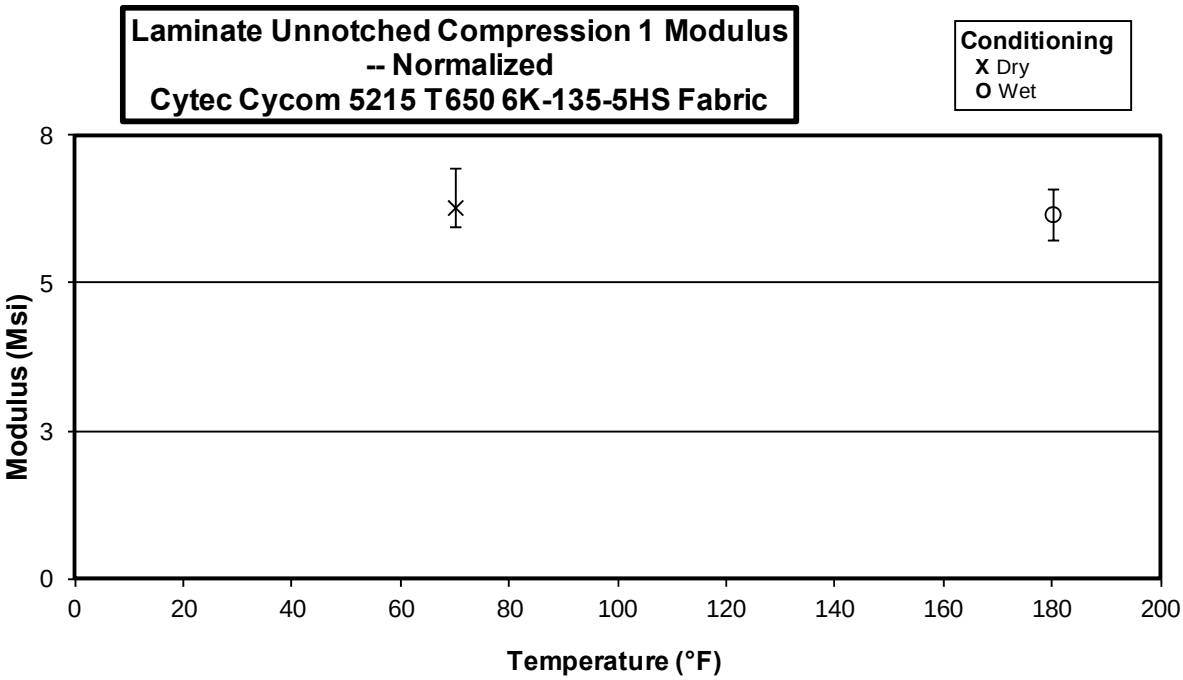
3.8 "40/20/40" Unnotched Tension 3 Properties (UNT3)



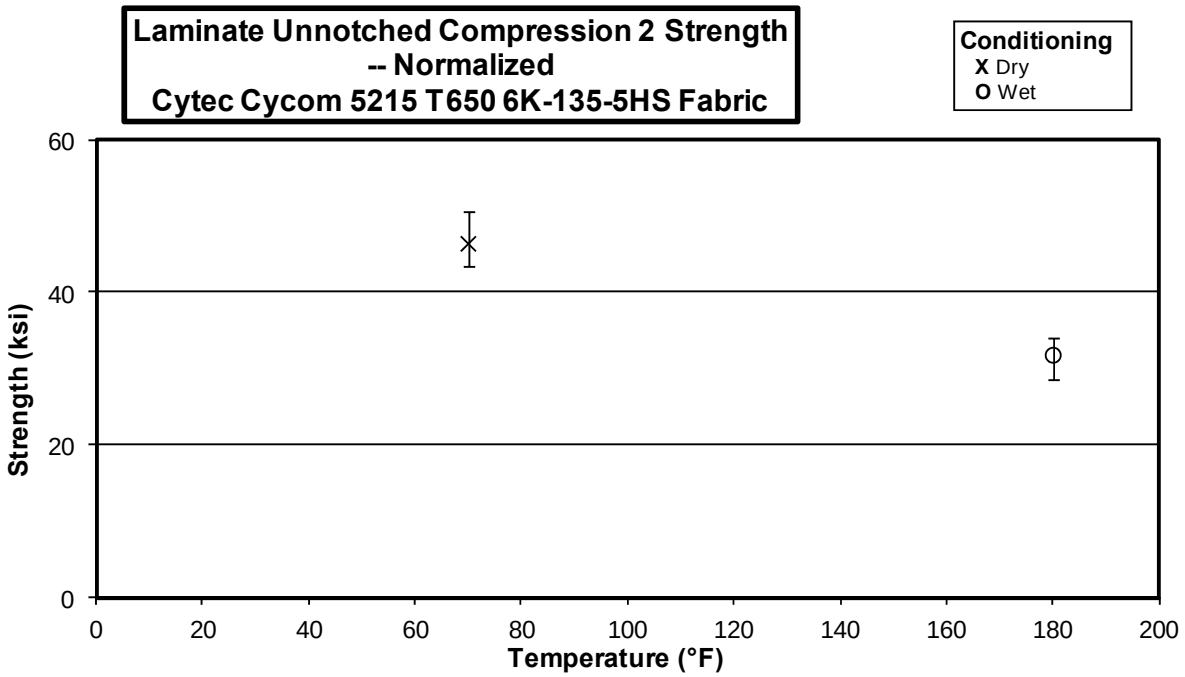


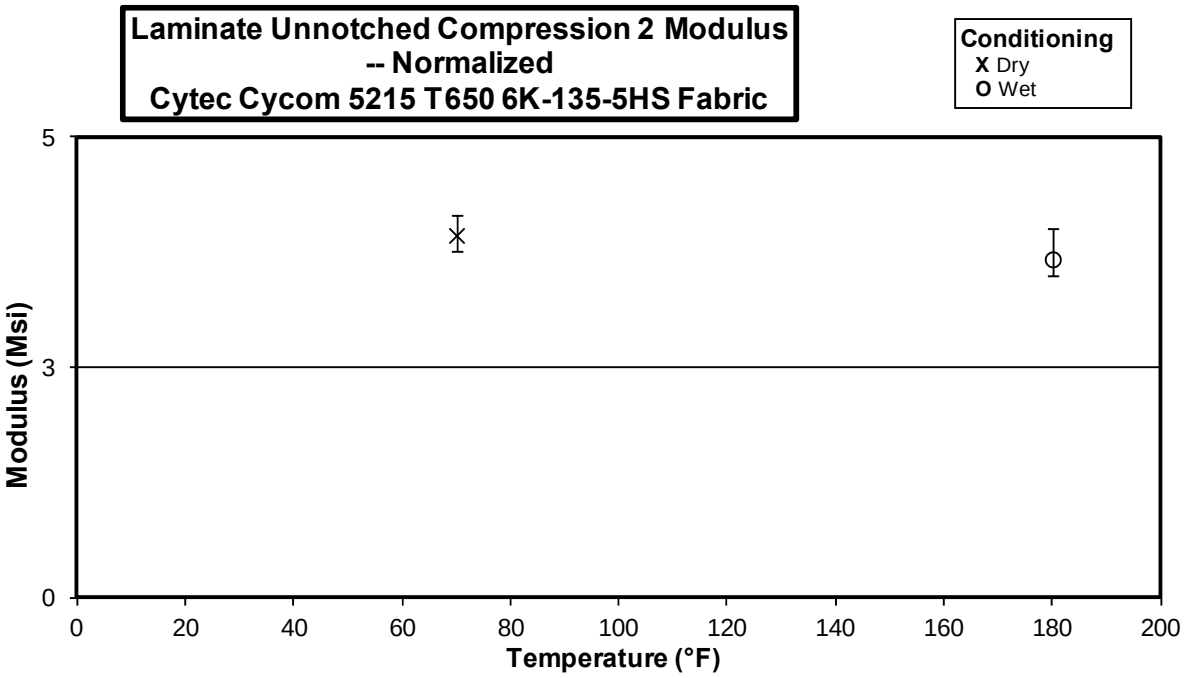
3.9 "25/50/25" Unnotched Compression 1 Properties (UNC1)



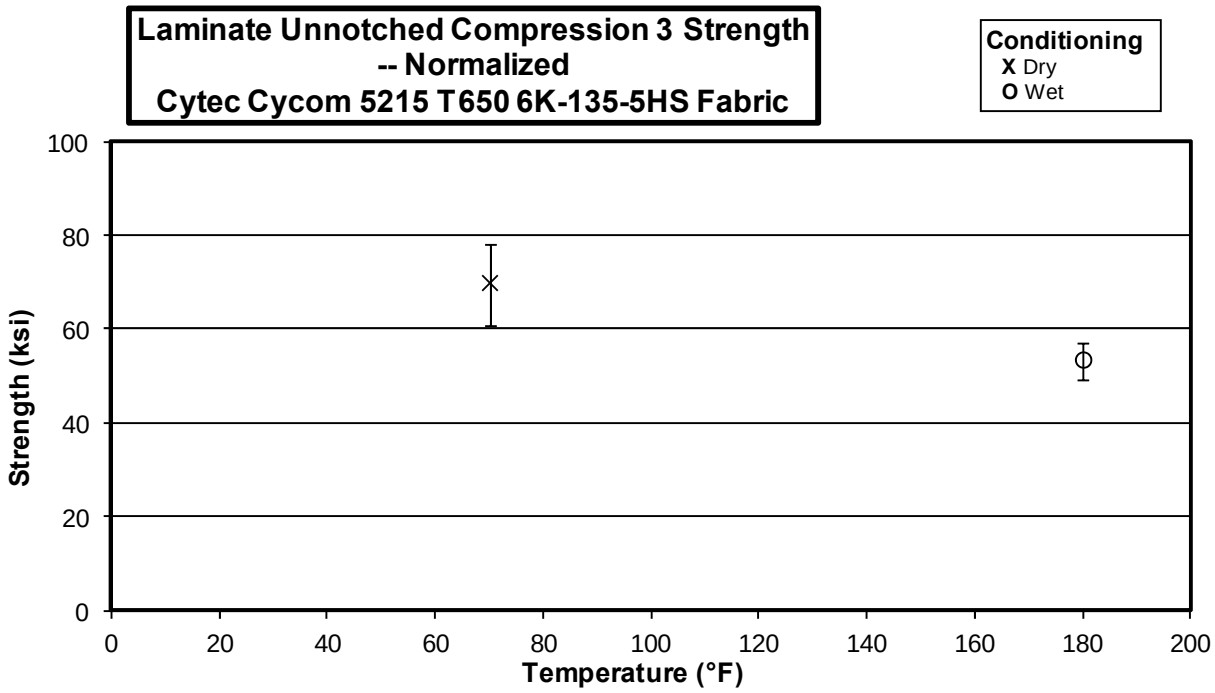


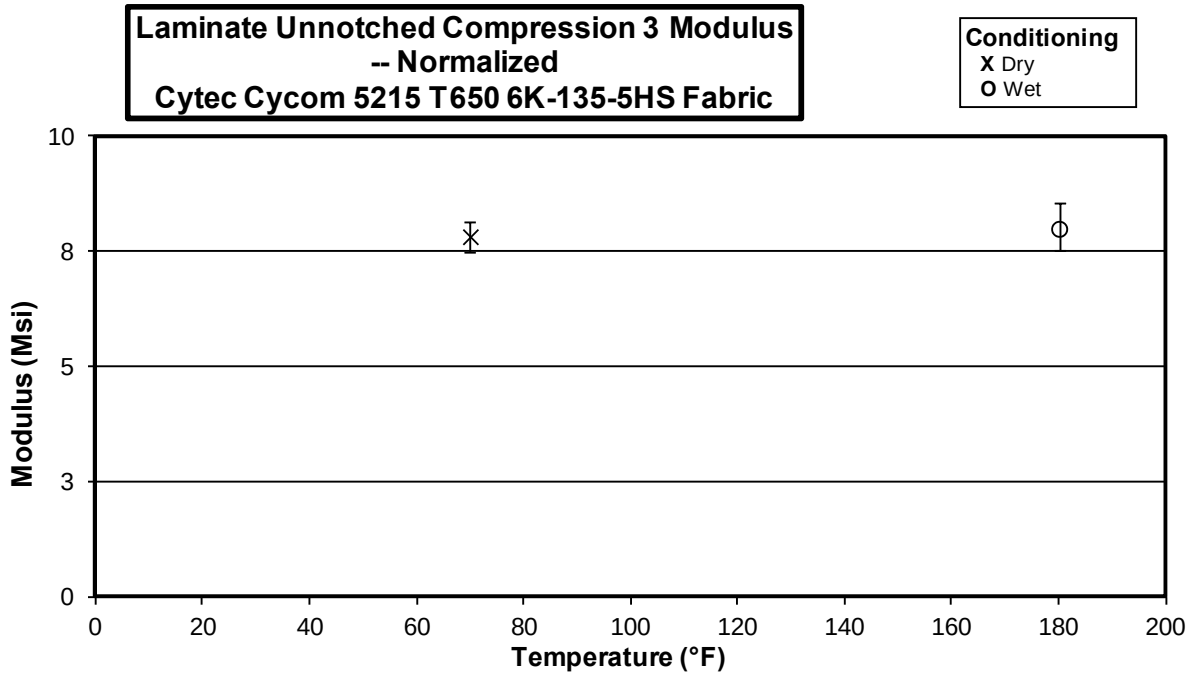
3.10 "10/80/10" Unnotched Compression 2 Properties (UNC2)



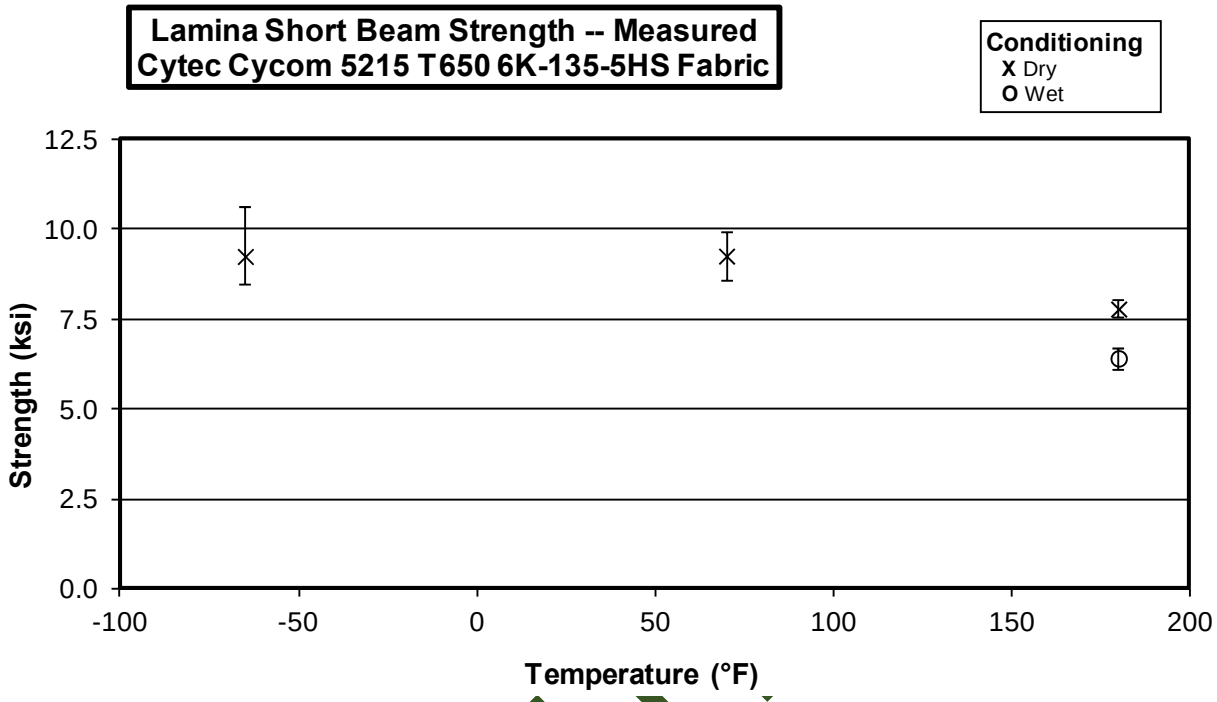


3.11 "40/20/40" Unnotched Compression 3 Properties (UNC3)

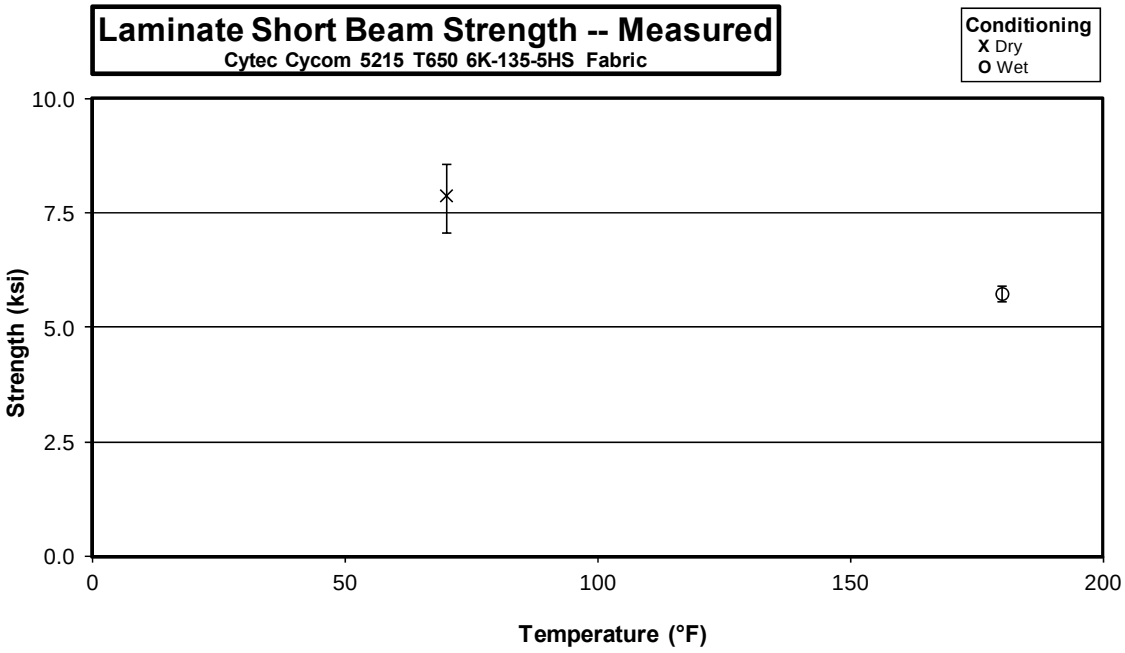




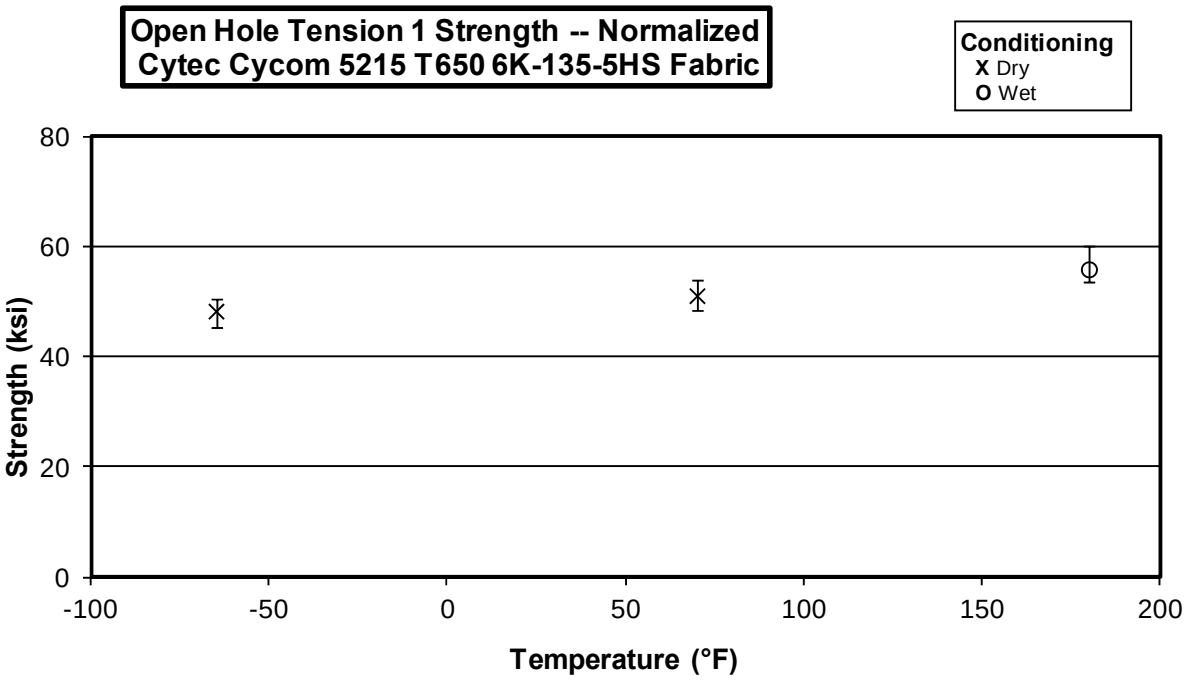
3.12 Lamina Short-Beam Strength Properties (SBS)



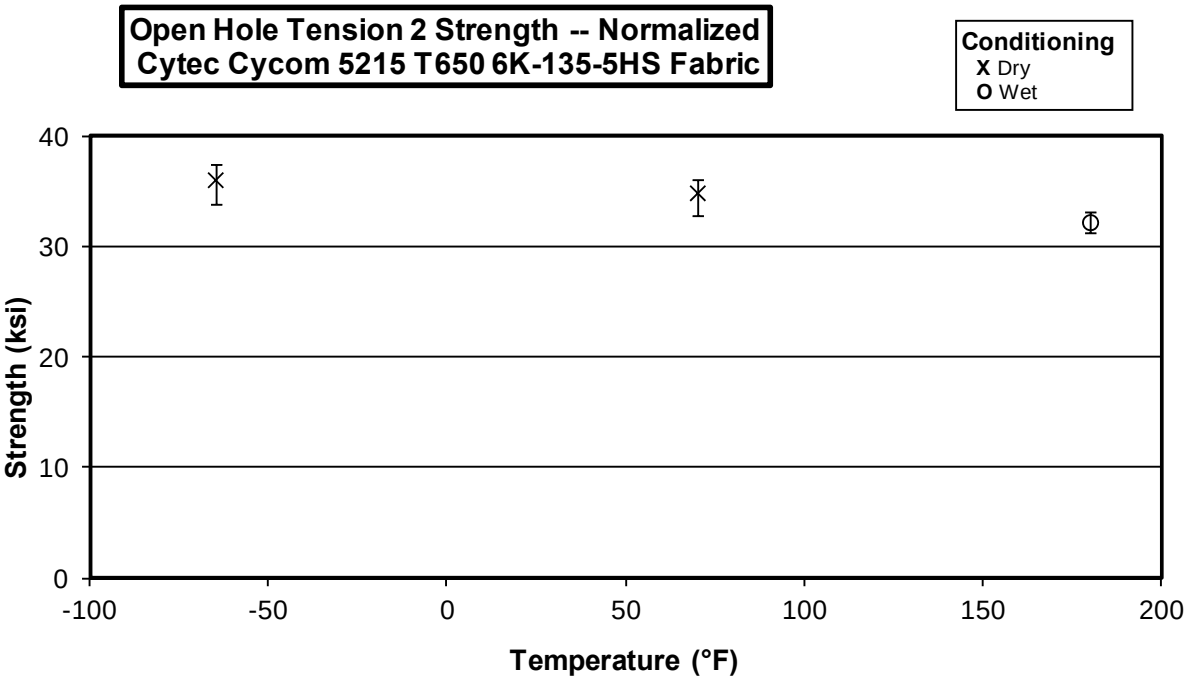
3.13 Laminate Short-Beam Strength Properties (SBS1)



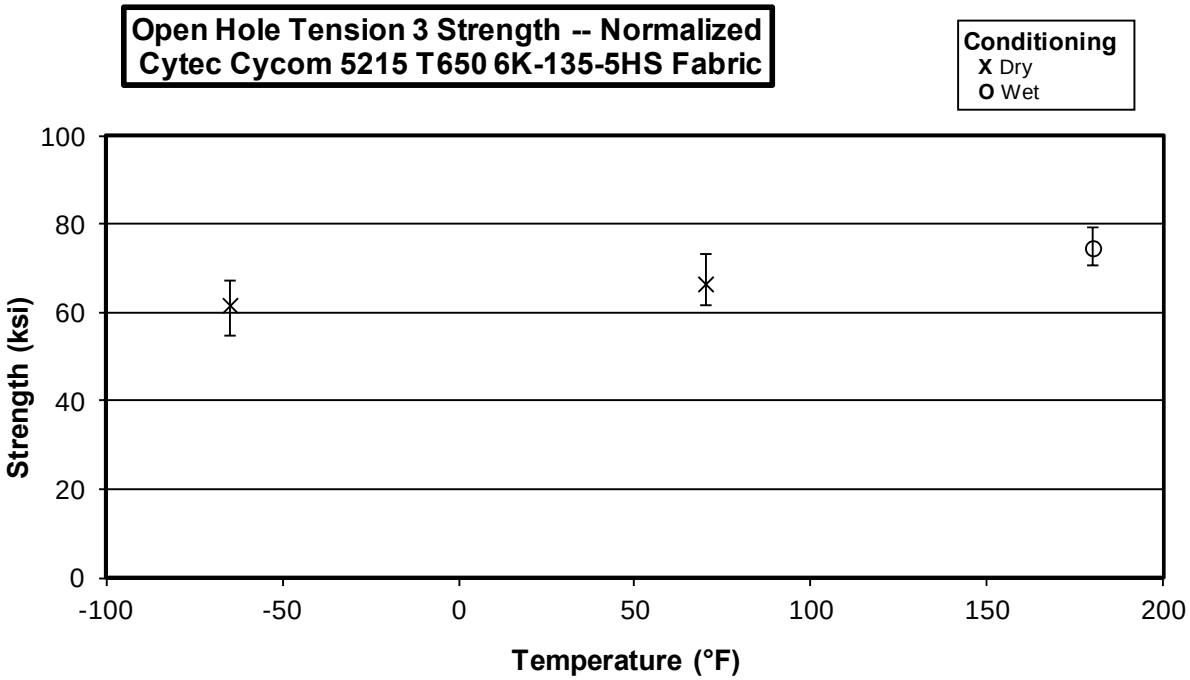
3.14 "25/50/25" Open-Hole Tension 1 Properties (OHT1)



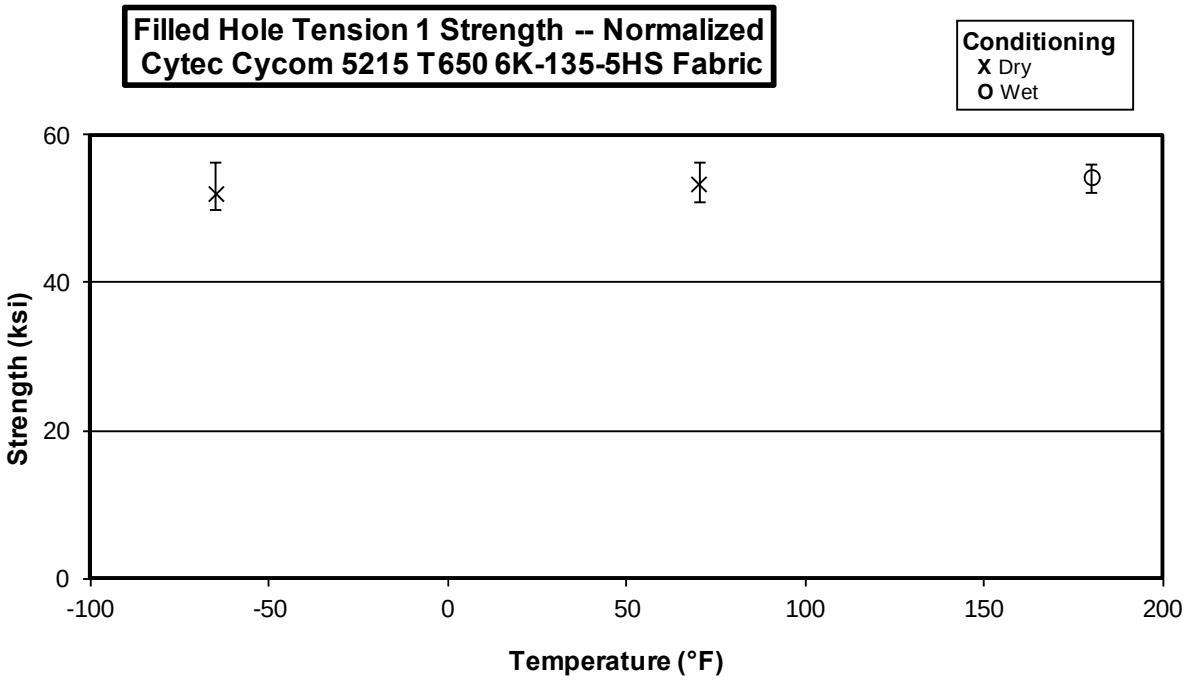
3.15 "10/80/10" Open-Hole Tension 2 Properties (OHT2)



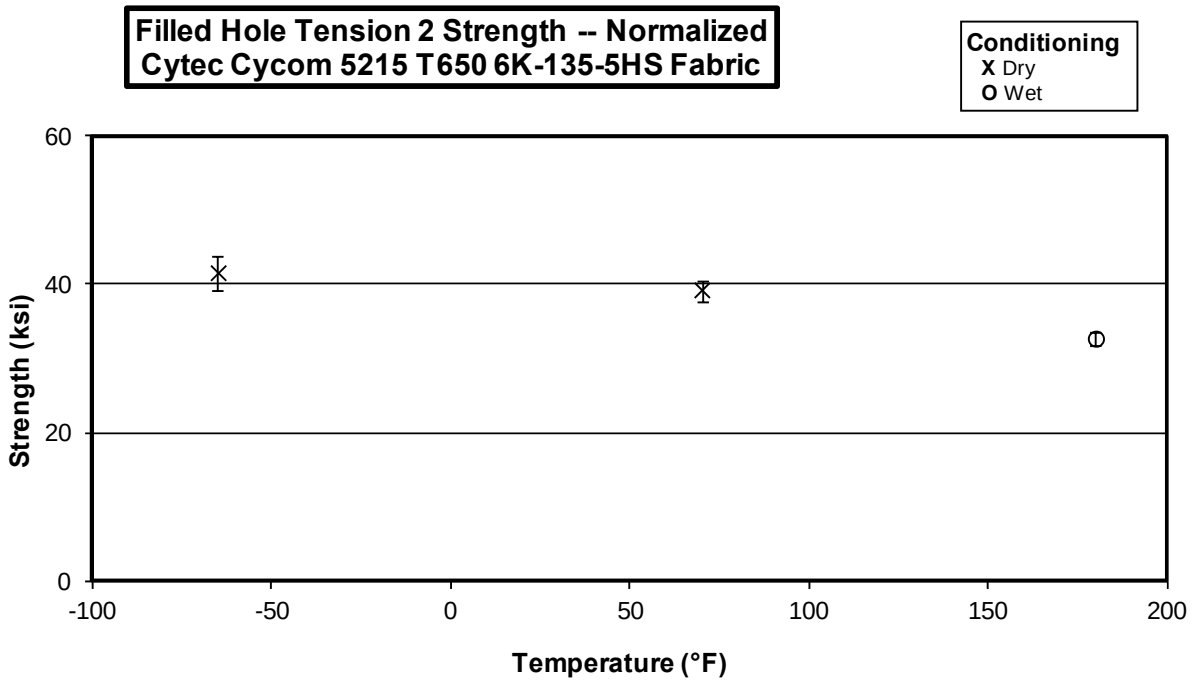
3.16 "40/20/40" Open-Hole Tension 3 Properties (OHT3)



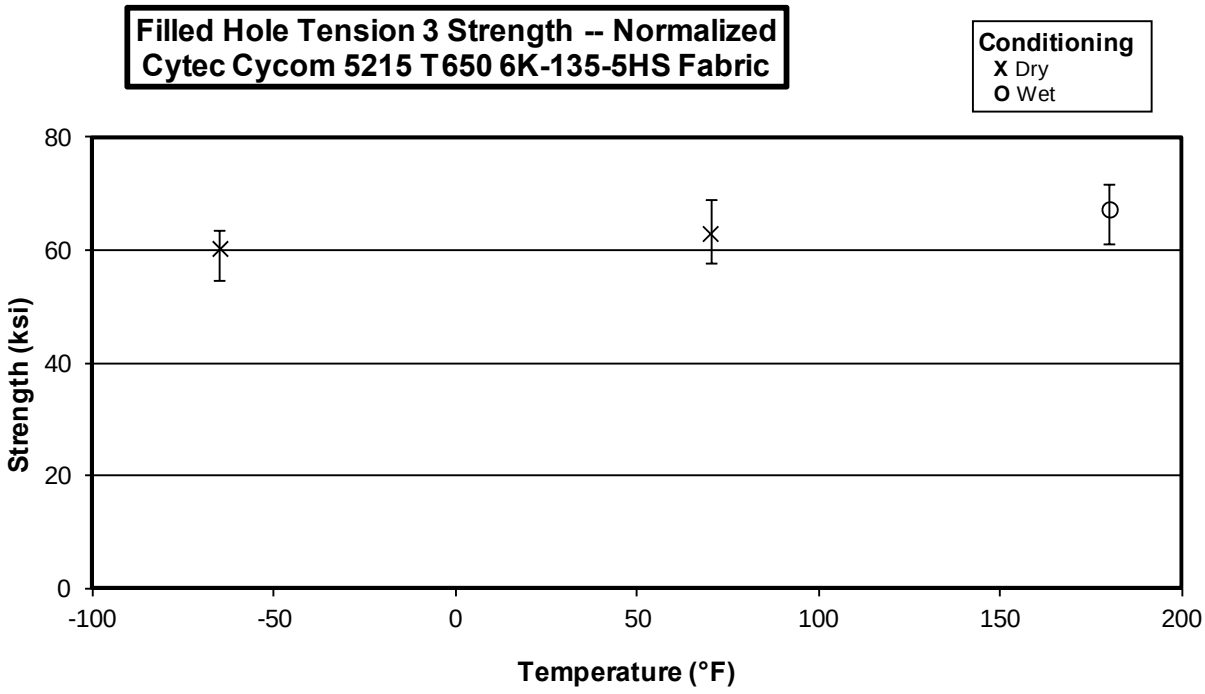
3.17 "25/50/25" Filled-Hole Tension 1 Properties (FHT1)



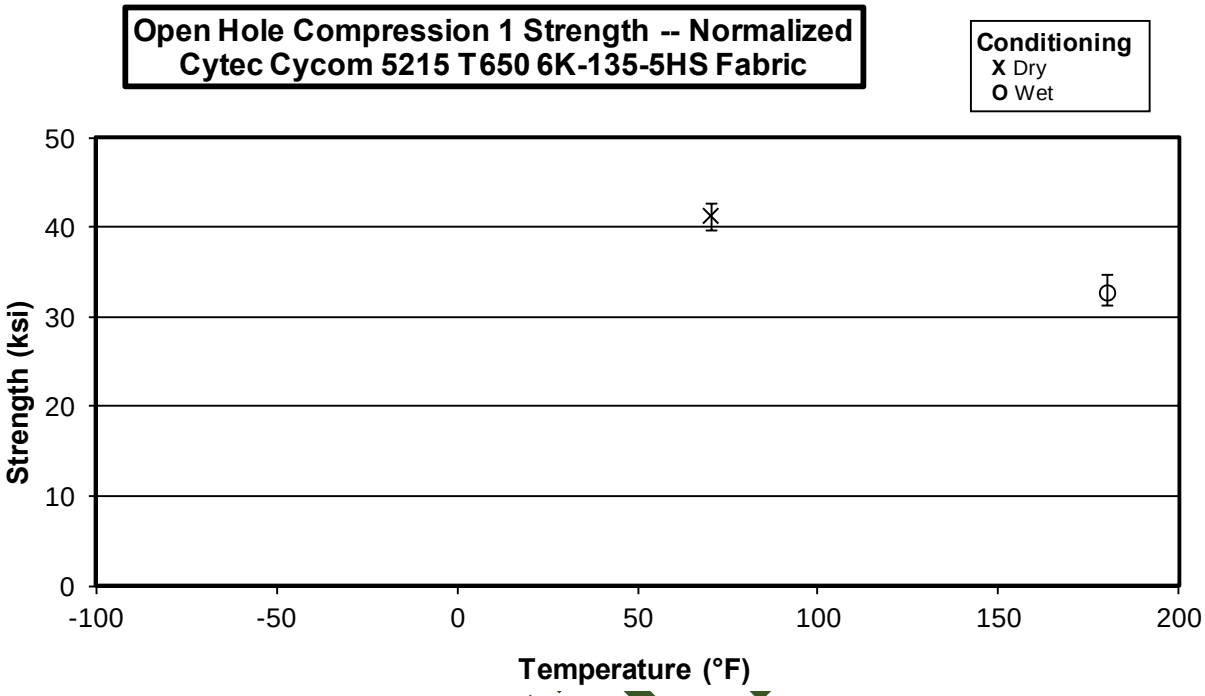
3.18 "10/80/10" Filled-Hole Tension 2 Properties (FHT2)



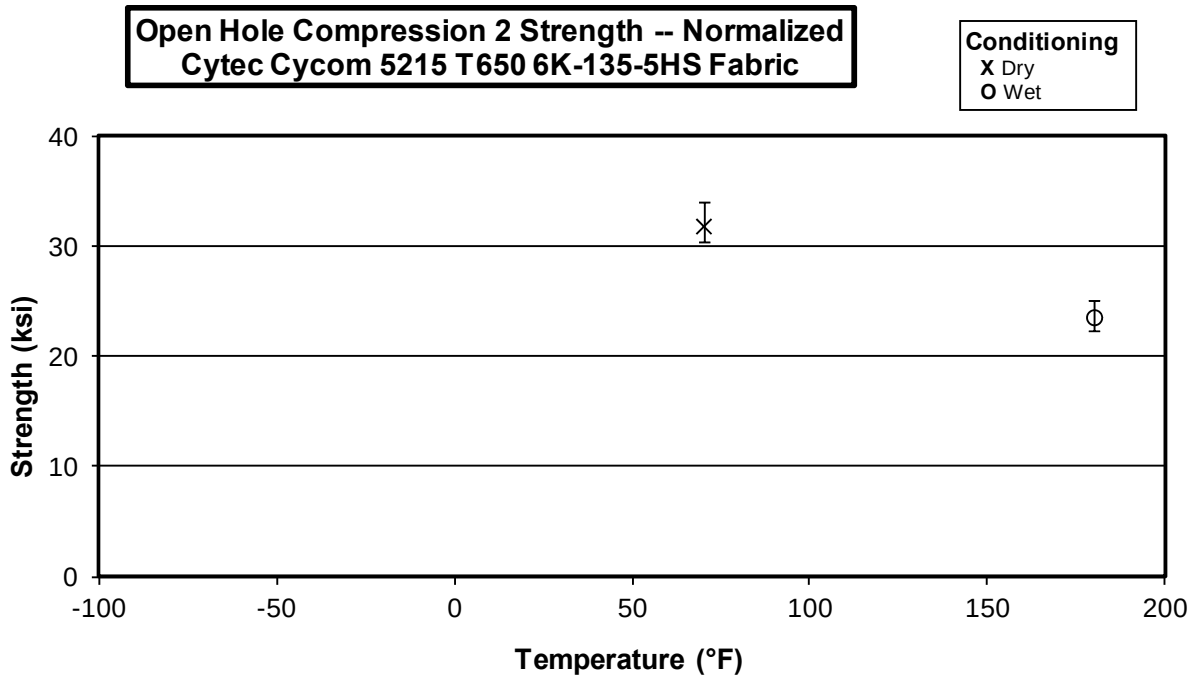
3.19 "40/20/40" Filled-Hole Tension 3 Properties (FHT3)



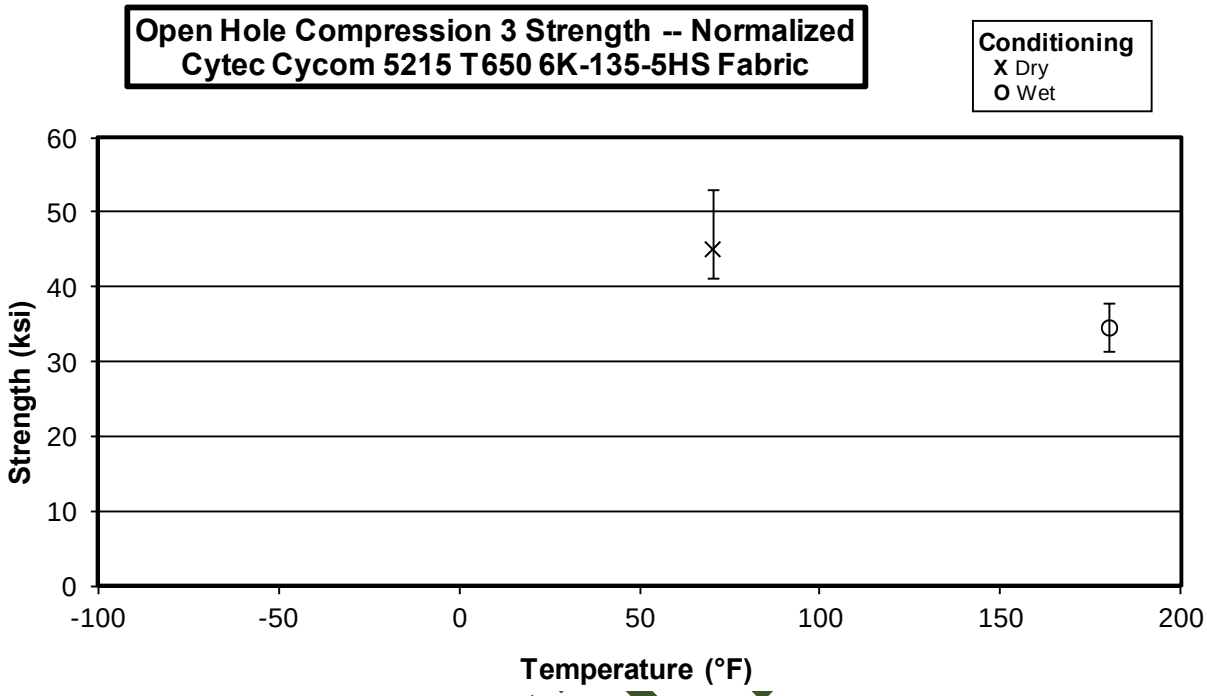
3.20 "25/50/25" Open-Hole Compression 1 Properties (OHC1)



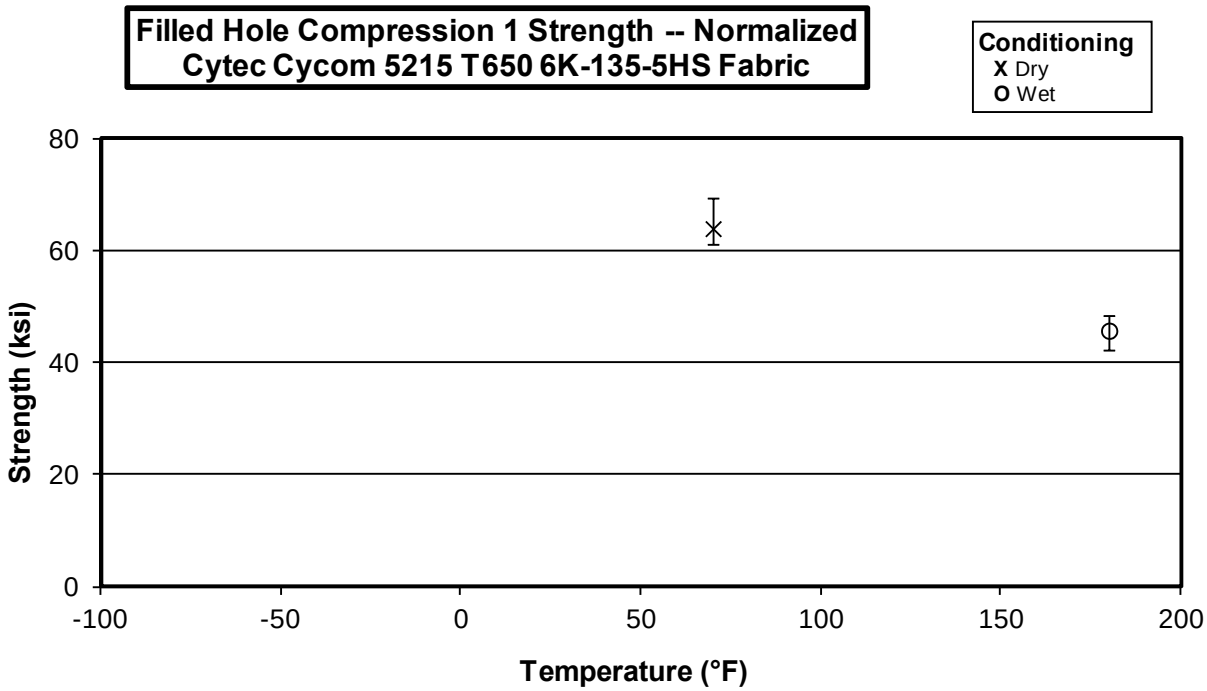
3.21 "10/80/10" Open-Hole Compression 2 Properties (OHC2)



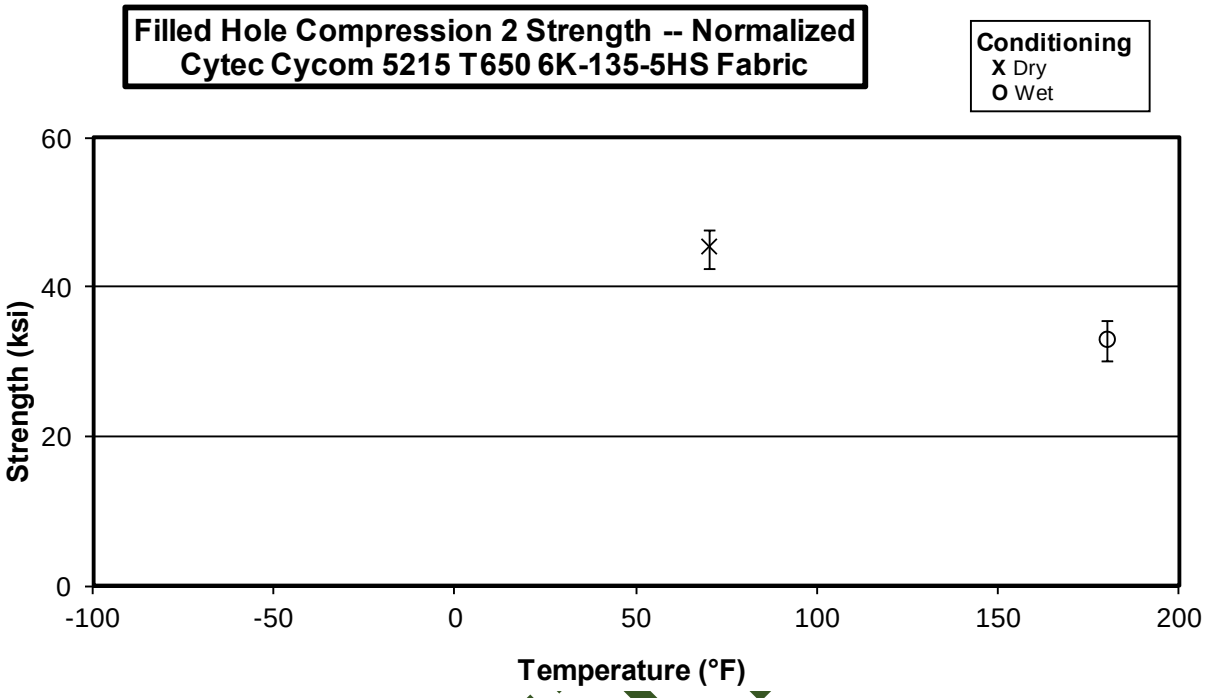
3.22 "40/20/40" Open-Hole Compression 3 Properties (OHC3)



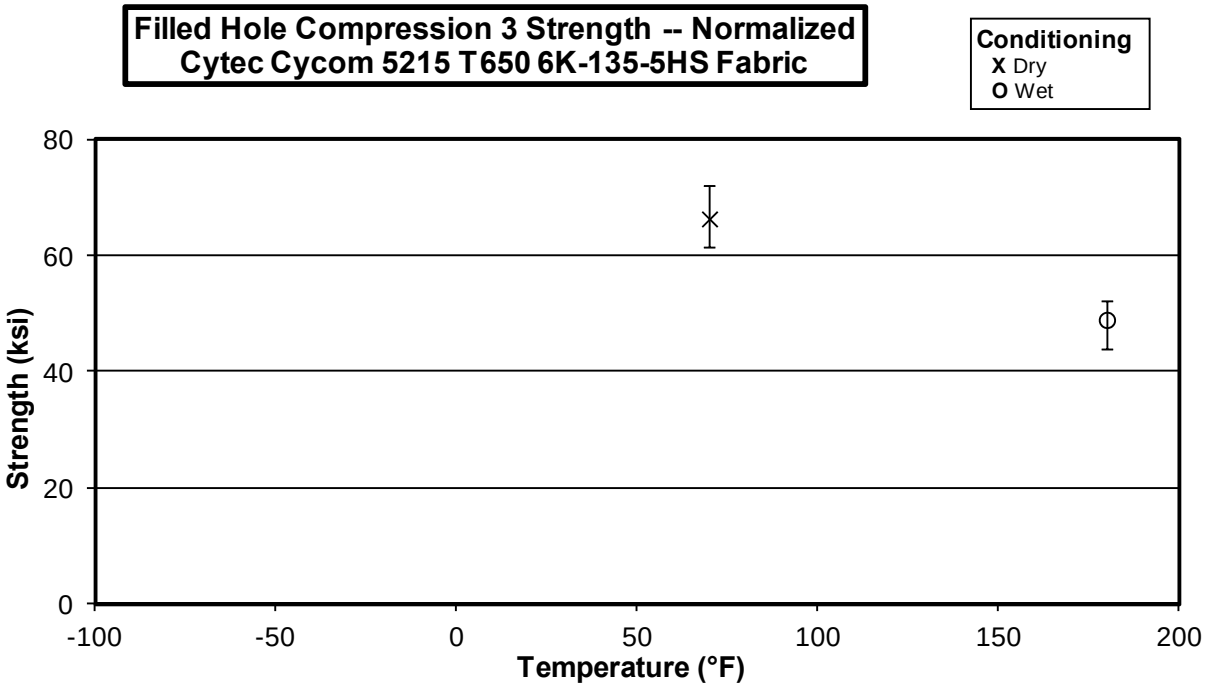
3.23 "25/50/25" Filled-Hole Compression 1 Properties (FHC1)



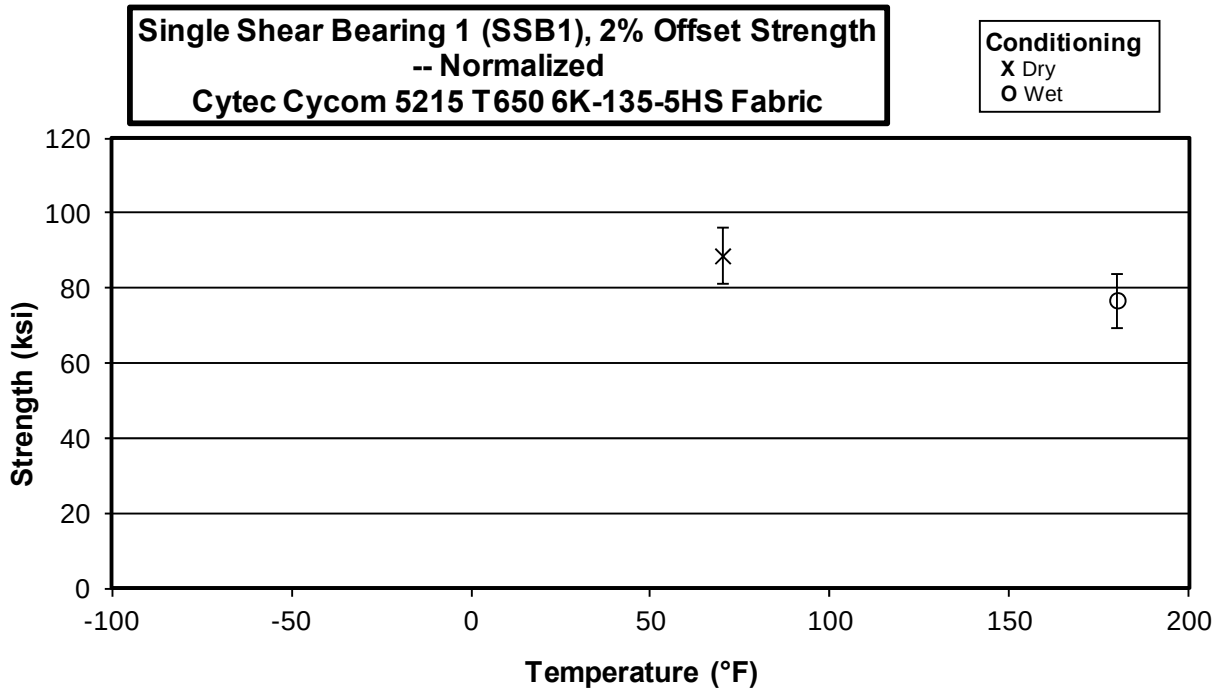
3.24 "10/80/10" Filled-Hole Compression 2 Properties (FHC2)



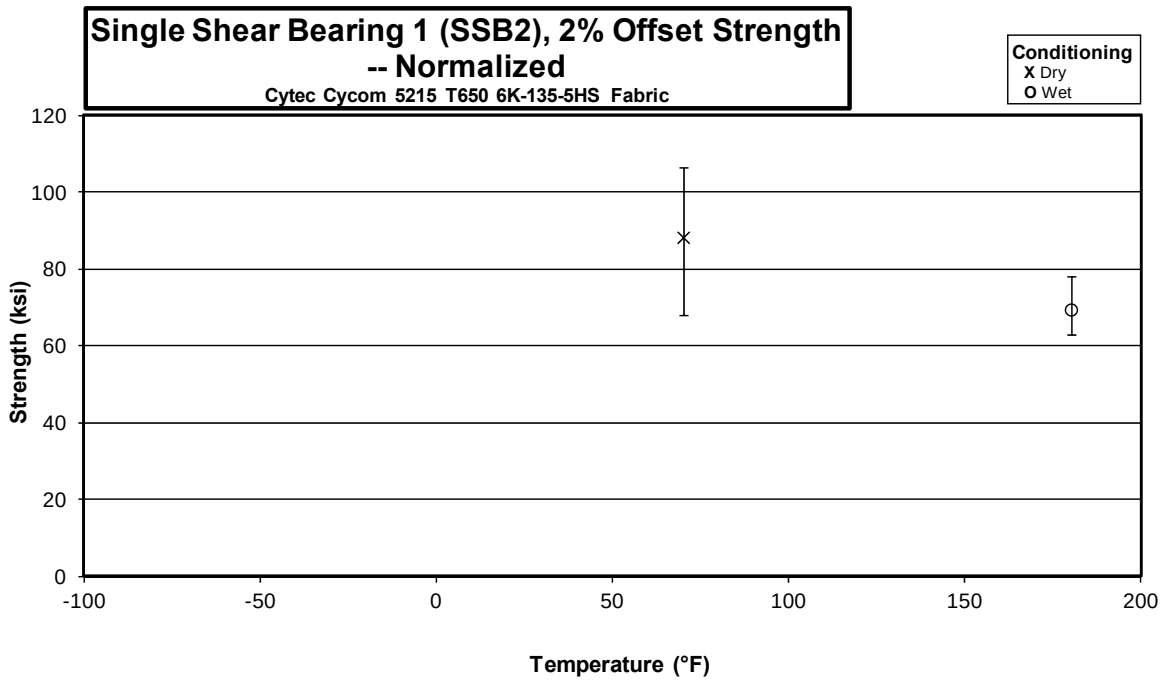
3.25 "40/20/40" Filled-Hole Compression 3 Properties (FHC3)



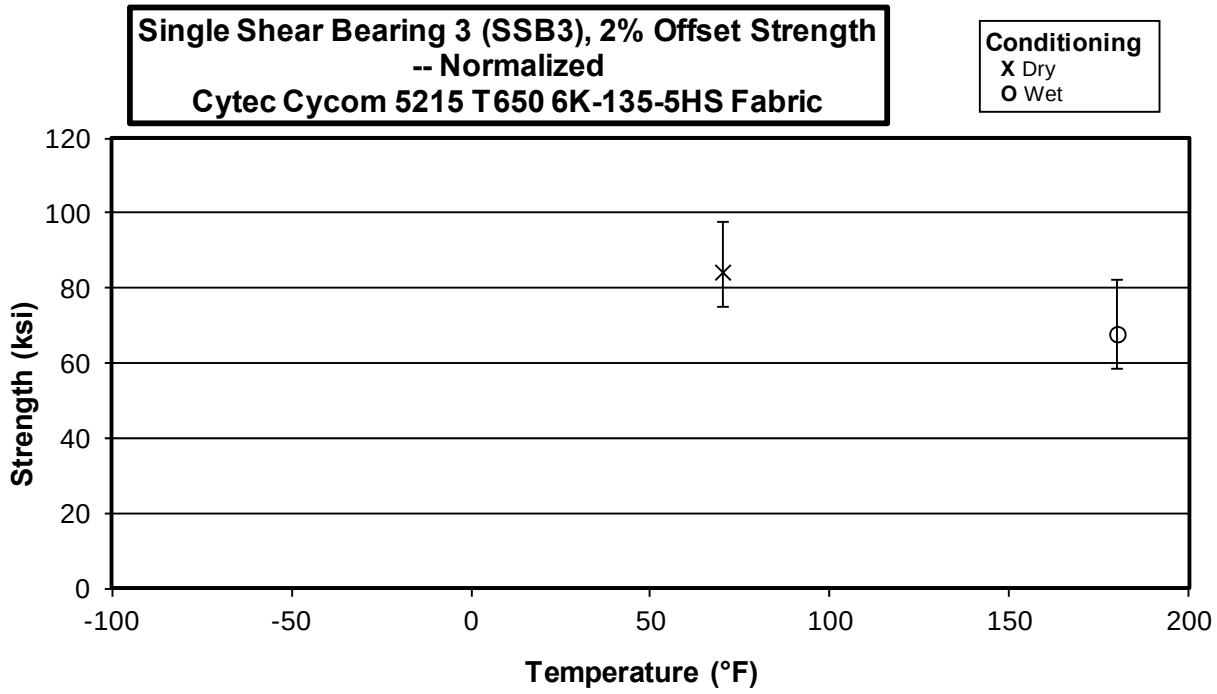
3.26 "25/50/25" Single-Shear Bearing 1 Properties (SSB1)



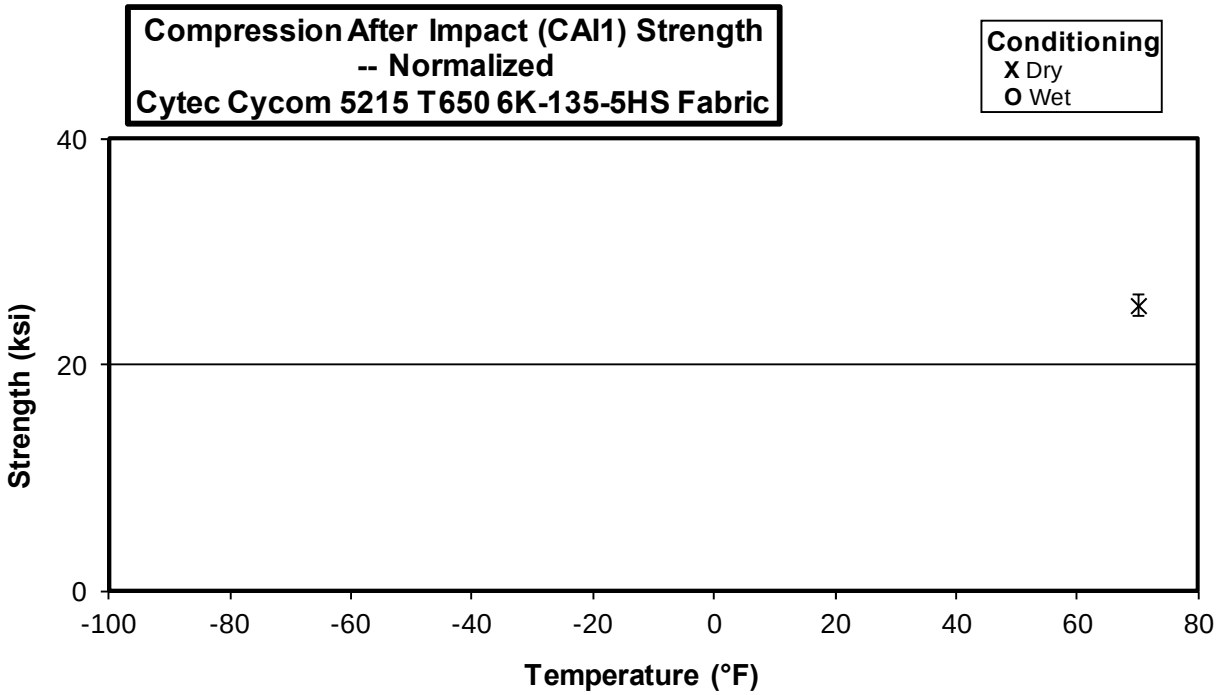
3.27 "10/80/10" Single-Shear Bearing 2 Properties (SSB2)



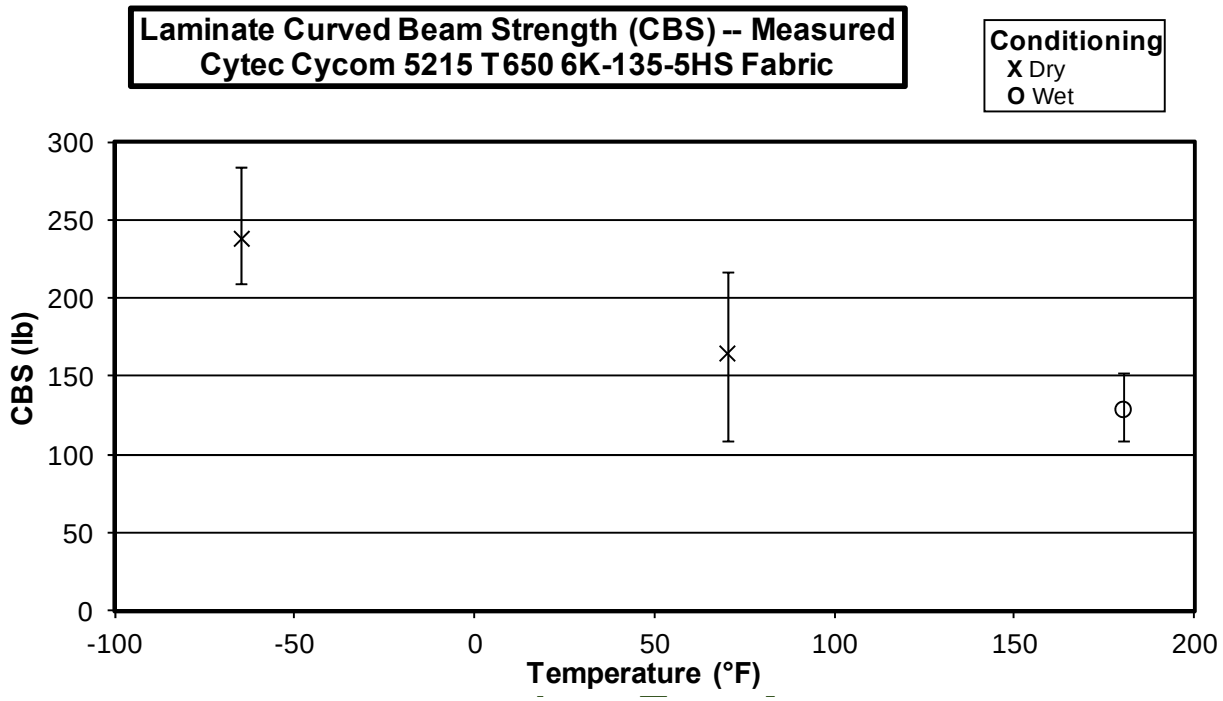
3.28 "40/20/40" Single-Shear Bearing 3 Properties (SSB3)

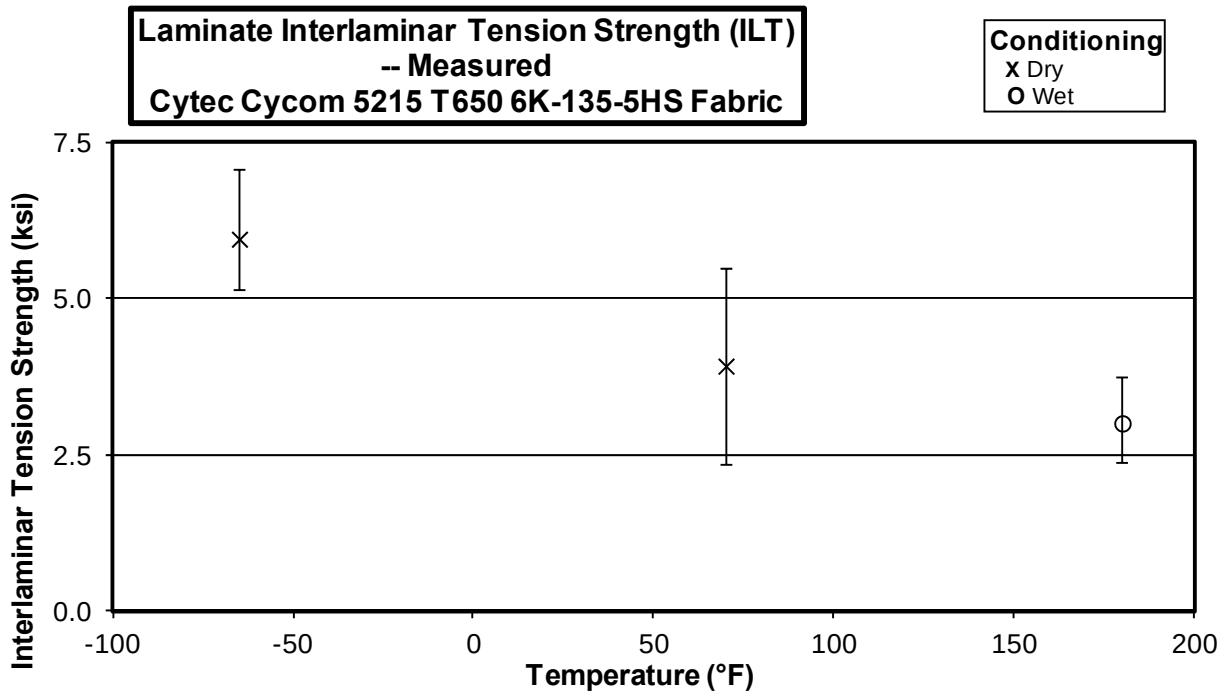


3.29 Compression After Impact 1 Properties (CAI1)



3.30 Interlaminar Tension Properties (ILT)





4. Raw Data

4.1 Warp Tension Properties (WT)

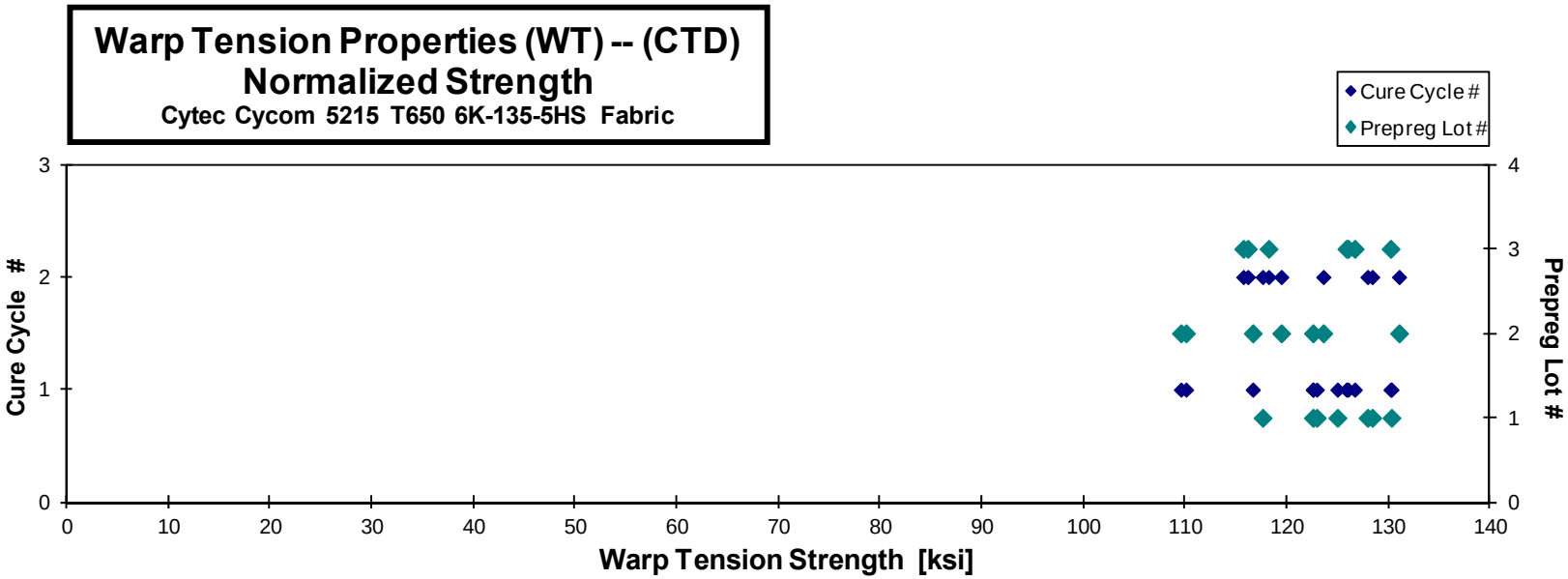
Warp Tension Properties (WT) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

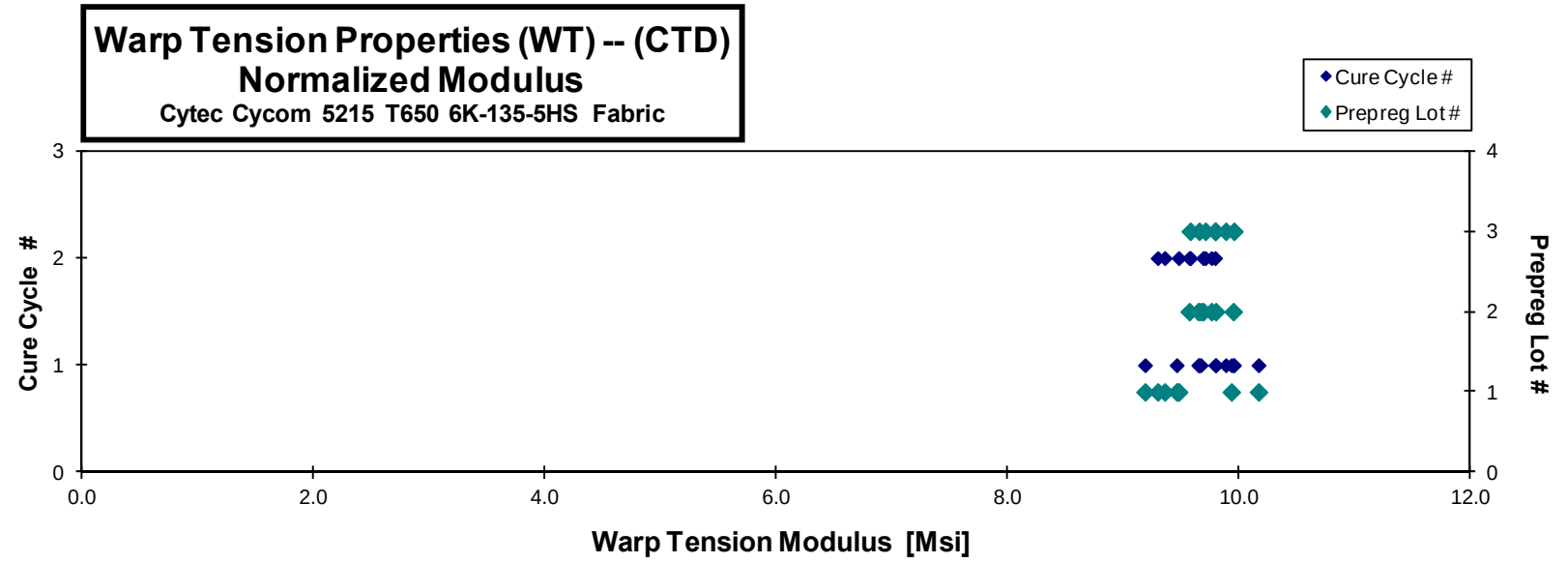
normalizing t_{ply} [in]: 0.0155

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]
C0EJA116B	A	C1	1	1	123.747	10.073	0.042	0.125	8	LWT / LGM	0.0157	124.961	10.172
C0EJA117B	A	C1	1	1	122.140	9.873	0.084	0.125	8	LGM	0.0156	122.928	9.937
C0EJA118B	A	C1	1	1	129.319	9.395	*	0.125	8	LGM	0.0156	130.274	9.465
C0EJA119B	A	C1	1	1	123.435	9.257	0.046	0.123	8	LWT / LWB	0.0154	122.555	9.191
C0EJA215B	A	C2	1	2	128.787	9.546	*	0.123	8	LWT	0.0154	127.921	9.482
C0EJA216B	A	C2	1	2	127.986	9.272	*	0.124	8	LWB	0.0155	128.382	9.301
C0EJA217B	A	C2	1	2	121.877	9.702	*	0.120	8	LGM	0.0150	117.601	9.361
C0EJB115B	B	C1	2	1	116.433	9.656	0.049	0.124	8	LWT/LWB	0.0155	116.636	9.673
C0EJB116B	B	C1	2	1	121.815	9.594	*	0.125	8	LGM	0.0156	122.552	9.652
C0EJB117B	B	C1	2	1	111.271	9.955	*	0.122	8	LGM	0.0153	109.566	9.802
C0EJB118B	B	C1	2	1	110.322	9.976	*	0.124	8	LGM	0.0155	110.069	9.954
C0EJB215B	B	C2	2	2	123.975	9.605	*	0.124	8	LWT	0.0155	123.576	9.574
C0EJB216B	B	C2	2	2	132.340	9.790	0.072	0.123	8	LGM	0.0153	131.024	9.693
C0EJB217B	B	C2	2	2	121.623	9.944	0.069	0.122	8	LGM	0.0152	119.432	9.765
C0EJC115B	C	C1	3	1	125.363	9.609	0.063	0.125	8	LGM	0.0156	126.003	9.658
C0EJC116B	C	C1	3	1	125.597	9.806	*	0.125	8	LGM	0.0156	126.661	9.889
C0EJC117B	C	C1	3	1	132.196	10.113	0.054	0.122	8	LWT	0.0153	130.188	9.959
C0EJC118B	C	C1	3	1	127.086	9.896	*	0.123	8	LWT / LWB	0.0153	125.839	9.799
C0EJC214B	C	C2	3	2	116.665	9.756	0.054	0.123	8	LGM	0.0154	116.147	9.713
C0EJC215B	C	C2	3	2	116.656	9.669	0.057	0.126	8	LGM/LWT	0.0157	118.192	9.796
C0EJC216B	C	C2	3	2	115.759	9.588	0.045	0.124	8	LWT/LWB	0.0155	115.697	9.582

*Poisson's Ratio not reported due to non linear data.

Average	**122.590**	**9.718**	**0.058**	**$Average_{norm}$**	**0.0155**	**122.200**	**9.687**
Standard Dev.	**6.232**	**0.238**	**0.013**	**$Standard\ Dev._{norm}$**		**6.314**	**0.239**
Coeff. of Var. [%]	**5.084**	**2.451**	**22.503**	**$Coeff.\ of\ Var.\ [\%]_{norm}$**		**5.167**	**2.472**
Min.	**110.322**	**9.257**	**0.042**	**Min.**	**0.0150**	**109.566**	**9.191**
Max.	**132.340**	**10.113**	**0.084**	**Max.**	**0.0157**	**131.024**	**10.172**
Number of Spec.	**21**	**21**	**11**	**Number of Spec.**		**21**	**21**


Warp Tension Properties (WT) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Tension Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140


Warp Tension Properties (WT) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Tension Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0

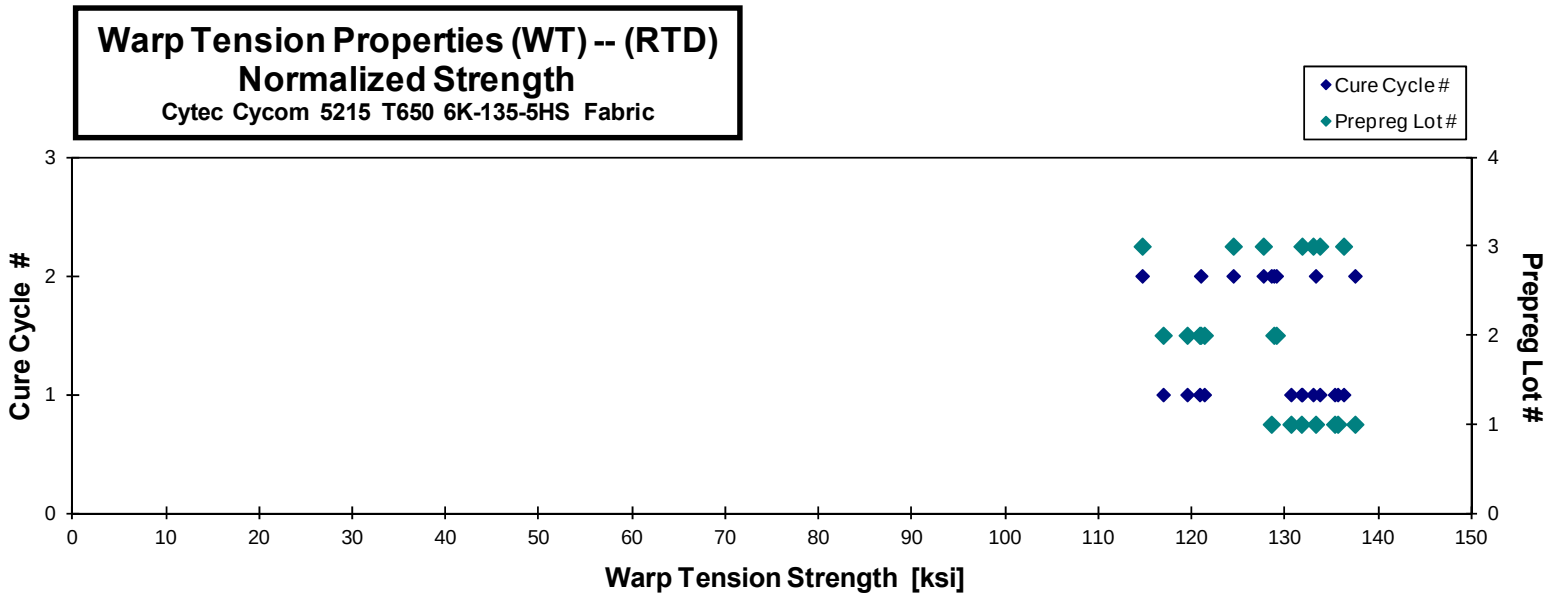
Warp Tension Properties (WT) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

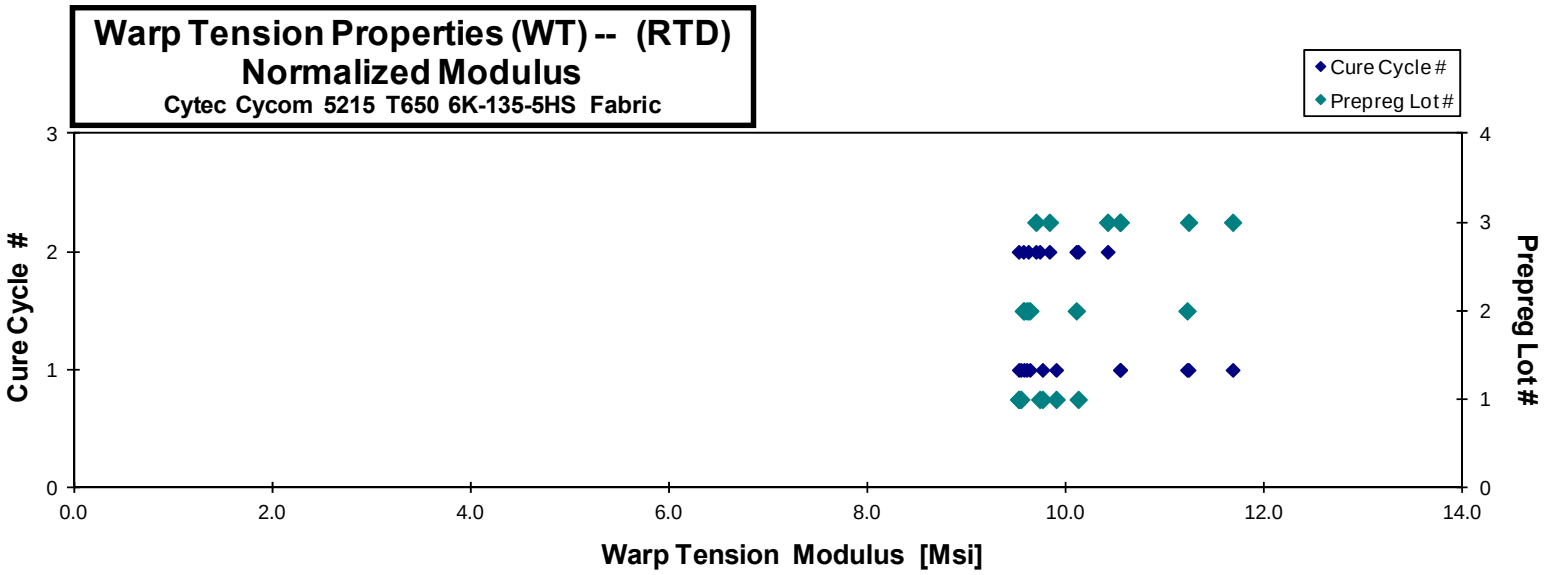
normalizing t_{ply} [in]: 0.0155

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]
C0EJA111A	A	C1	1	1	133.530	10.038	0.038	0.122	8	LGM / LWB	0.0153	131.735	9.903
C0EJA112A	A	C1	1	1	136.103	9.824	0.040	0.123	8	LGM / LWB	0.0154	135.298	9.766
C0EJA113A	A	C1	1	1	135.979	9.572	0.035	0.124	8	LGM / LWT	0.0155	135.632	9.547
C0EJA114A	A	C1	1	1	130.602	9.526	0.035	0.124	8	LWT / LWB	0.0155	130.619	9.527
C0EJA212A	A	C2	1	2	138.987	10.237	0.037	0.123	8	LGM	0.0153	137.474	10.125
C0EJA213A	A	C2	1	2	129.662	9.610	0.038	0.123	8	LGM	0.0154	128.511	9.525
C0EJA214A	A	C2	1	2	134.614	9.837	0.038	0.123	8	LWT / LWB	0.0153	133.257	9.738
C0EJB111A	B	C1	2	1	118.345	9.696	0.038	0.123	8	LWT / LWB	0.0153	116.914	9.579
C0EJB112A	B	C1	2	1	120.850	9.609	0.041	0.124	8	LGM	0.0155	120.818	9.606
C0EJB113A	B	C1	2	1	118.666	11.147	0.045	0.125	8	LGM	0.0156	119.479	11.223
C0EJB114A	B	C1	2	1	120.885	9.603	0.037	0.124	8	LWB / LWT	0.0156	121.324	9.638
C0EJB211A	B	C2	2	2	131.039	10.283	0.041	0.122	8	LGM	0.0152	128.784	10.106
C0EJB212A	B	C2	2	2	130.890	9.760	0.039	0.122	8	LGM	0.0153	129.043	9.622
C0EJB213A	B	C2	2	2	121.842	9.644	0.037	0.123	8	LWT / LGM	0.0154	120.941	9.572
C0EJC111A	C	C1	3	1	138.817	10.745	0.040	0.122	8	LGM	0.0152	136.261	10.547
C0EJC112A	C	C1	3	1	131.231	11.190	0.041	0.125	8	LGM	0.0156	131.795	11.238
C0EJC113A	C	C1	3	1	133.683	10.547	0.039	0.124	8	LWT / LWB	0.0155	133.701	10.549
C0EJC114A	C	C1	3	1	131.199	11.526	0.053	0.126	8	LWT / LWB	0.0157	132.980	11.683
C0EJC211A	C	C2	3	2	116.652	10.603	0.048	0.122	8	LWT / LWB	0.0152	114.660	10.422
C0EJC212A	C	C2	3	2	125.456	9.779	0.046	0.123	8	LAT / LWB	0.0154	124.427	9.699
C0EJC213A	C	C2	3	2	126.581	9.753	0.046	0.125	8	LGM / LWT	0.0156	127.653	9.835

Average	128.839	10.120	0.041
Standard Dev.	6.943	0.609	0.005
Coeff. of Var. [%]	5.389	6.021	11.416
Min.	116.652	9.526	0.035
Max.	138.987	11.526	0.053
Number of Spec.	21	21	21

$Average_{norm}$	0.0154	128.157	10.069
$Standard\ Dev._{norm}$		6.795	0.643
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.302	6.382
Min.	0.0152	114.660	9.525
Max.	0.0157	137.474	11.683
Number of Spec.		21	21


Warp Tension Properties (WT) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Tension Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
0
1
2
3
4


Warp Tension Properties (WT) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Tension Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
0
1
2
3
4

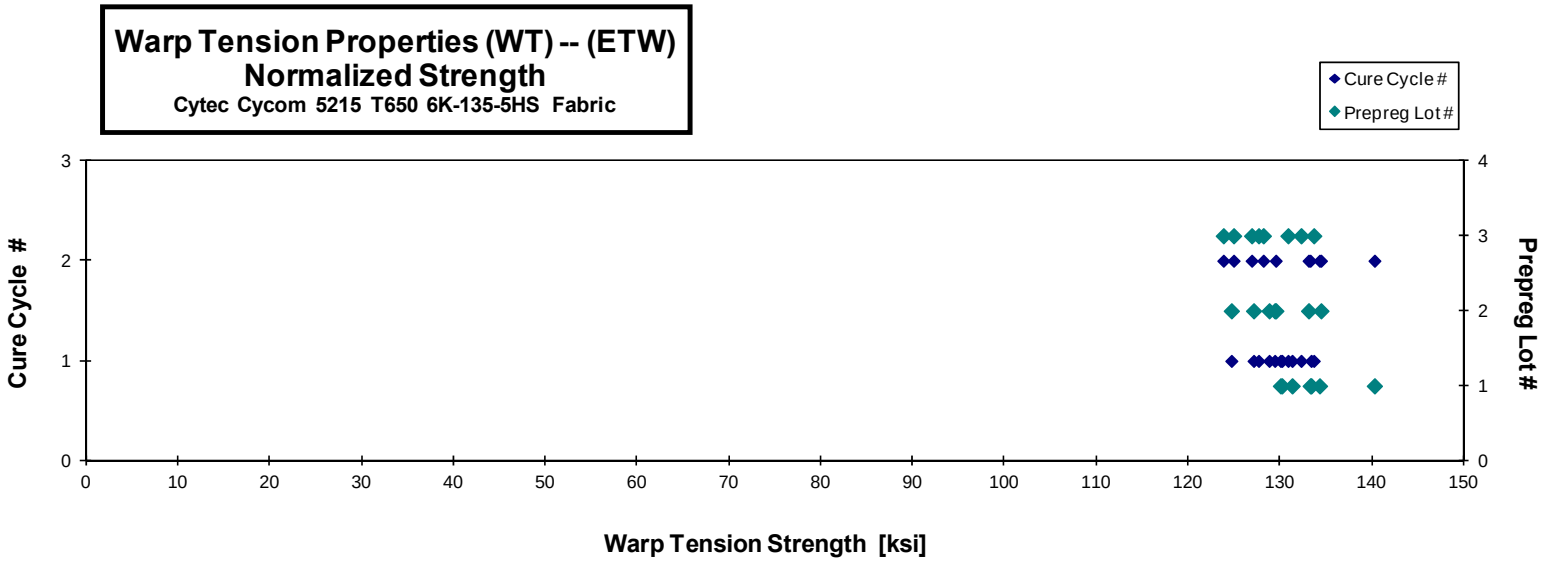
Warp Tension Properties (WT) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

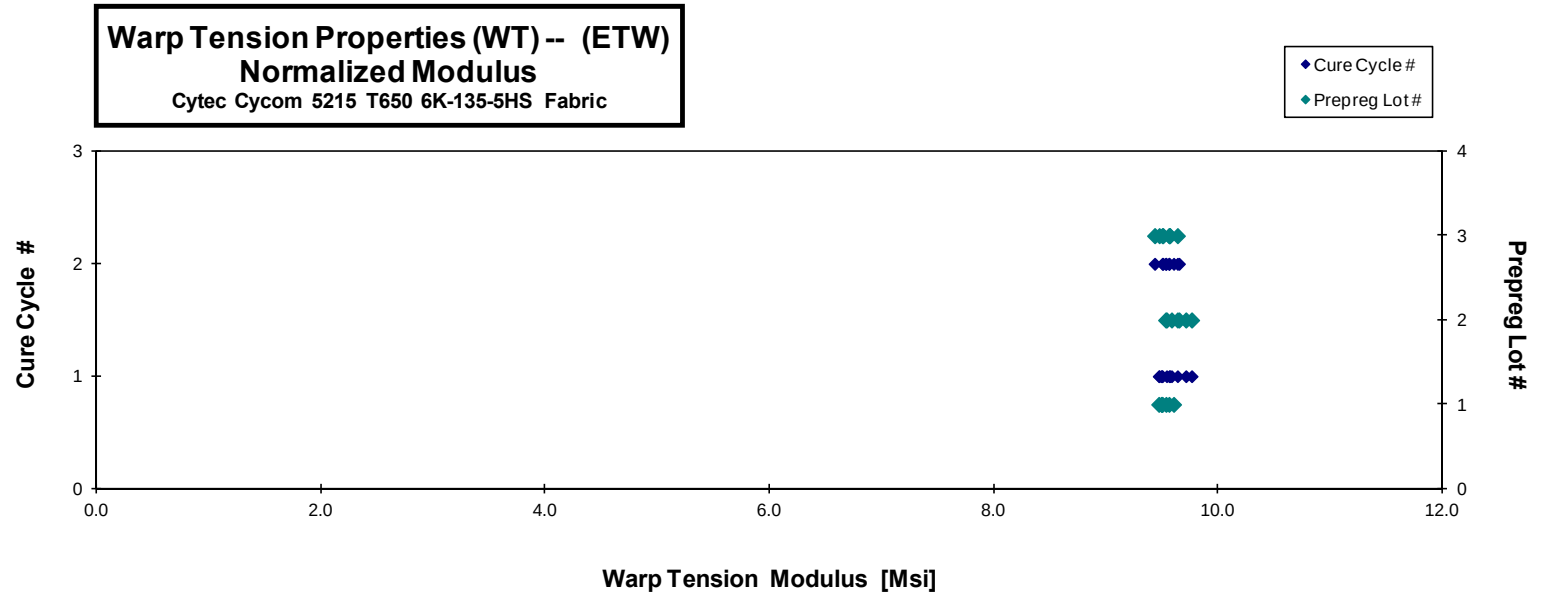
normalizing t_{ply} [in]: 0.0155

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]
C0EJA11BM	A	C1	1	1	133.009	9.472	0.042	0.124	8	LGM	0.0155	133.384	9.499
C0EJA11CM	A	C1	1	1	128.700	9.406	0.047	0.125	8	LWT/LWB	0.0157	130.049	9.504
C0EJA11DM	A	C1	1	1	129.158	9.397	0.042	0.125	8	LWT/LWB	0.0156	130.199	9.472
C0EJA11EM	A	C1	1	1	130.139	9.411	0.044	0.125	8	LGM/LWB	0.0156	131.311	9.496
C0EJA219M	A	C2	1	2	133.489	9.578	0.043	0.124	8	LGM	0.0155	133.292	9.564
C0EJA21AM	A	C2	1	2	134.823	9.643	0.041	0.124	8	LGM	0.0154	134.297	9.605
C0EJA21BM	A	C2	1	2	140.849	9.576	0.040	0.124	8	LGM	0.0154	140.281	9.537
C0EJB119M	B	C1	2	1	126.562	9.671	*	0.125	8	LGM	0.0156	127.123	9.714
C0EJB11AM	B	C1	2	1	124.870	9.779	*	0.124	8	LWT/LWB	0.0155	124.702	9.766
C0EJB11BM	B	C1	2	1	126.829	9.440	*	0.126	8	LGM/LWB	0.0157	128.807	9.587
C0EJB11CM	B	C1	2	1	130.312	9.608	*	0.123	8	LGM/LWT	0.0154	129.418	9.542
C0EJB219M	B	C2	2	2	134.822	9.560	0.042	0.124	8	LGM	0.0155	134.460	9.534
C0EJB21AM	B	C2	2	2	133.718	9.698	0.054	0.123	8	LGM/LWB	0.0154	133.107	9.654
C0EJB21BM	B	C2	2	2	128.121	9.534	0.045	0.125	8	LGM/LWB	0.0157	129.533	9.639
C0EJC119M	C	C1	3	1	131.183	9.594	0.047	0.124	8	LGM/LWB	0.0155	130.866	9.571
C0EJC11AM	C	C1	3	1	132.537	9.584	0.042	0.124	8	LGM	0.0155	132.288	9.566
C0EJC11BM	C	C1	3	1	127.955	9.499	0.043	0.124	8	LWT/LWB	0.0155	127.663	9.477
C0EJC11CM	C	C1	3	1	134.612	9.707	0.046	0.123	8	LGM	0.0154	133.671	9.640
C0EJC217M	C	C2	3	2	125.212	9.457	0.085	0.124	8	LGM	0.0155	124.943	9.436
C0EJC218M	C	C2	3	2	129.235	9.643	0.044	0.123	8	LGM	0.0154	128.176	9.564
C0EJC219M	C	C2	3	2	125.979	9.675	0.045	0.122	8	LGM	0.0152	123.829	9.510
C0EJC21AM	C	C2	3	2	129.574	9.704	0.053	0.121	8	LGM/LWB	0.0152	126.910	9.504

*Poisson's Ratio not available because a Uniaxial Extensometer was used.

Average	**130.531**	**9.574**	**0.047**	**$Average_{norm}$**	**0.0155**	**130.378**	**9.563**
Standard Dev.	**3.906**	**0.111**	**0.010**	**Standard $Dev._{norm}$**		**3.869**	**0.081**
Coeff. of Var. [%]	**2.992**	**1.160**	**21.502**	**Coeff. of Var. $[\%]_{norm}$**		**2.968**	**0.849**
Min.	**124.870**	**9.397**	**0.040**	**Min.**	**0.0152**	**123.829**	**9.436**
Max.	**140.849**	**9.779**	**0.085**	**Max.**	**0.0157**	**140.281**	**9.766**
Number of Spec.	**22**	**22**	**18**	**Number of Spec.**		**22**	**22**


Warp Tension Properties (WT) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
Warp Tension Strength [ksi]


Warp Tension Properties (WT) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Warp Tension Modulus [Msi]

4.2 Fill Tension Properties (FT)

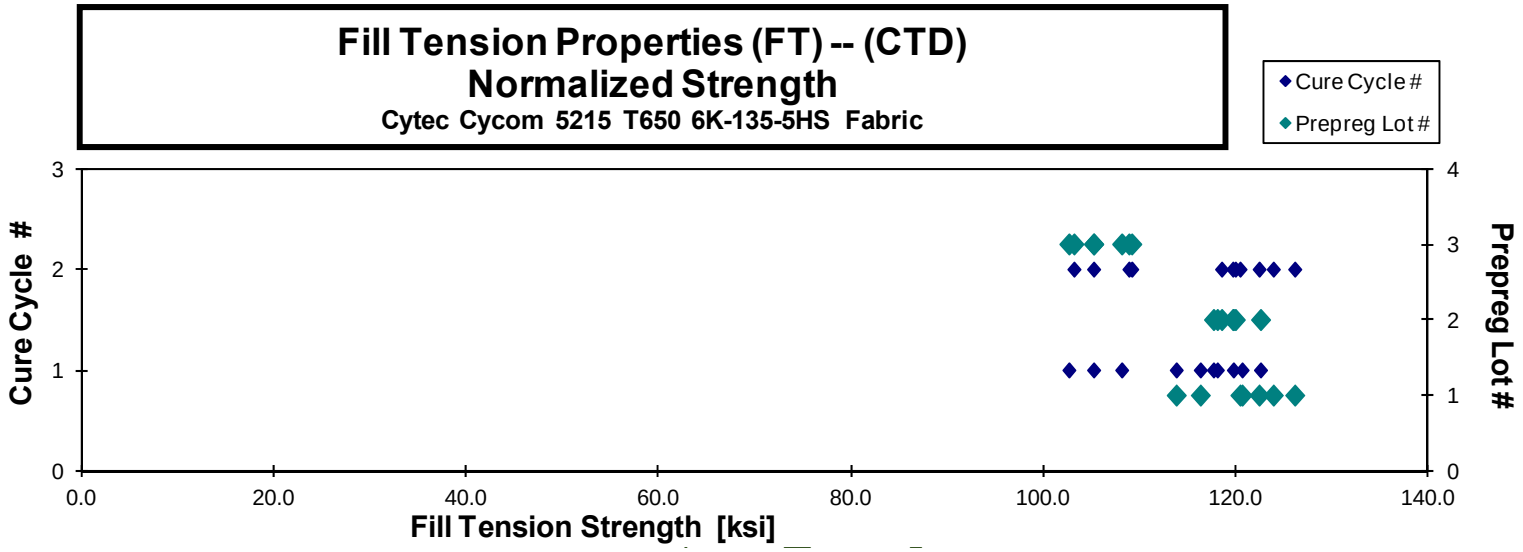
Fill Tension Properties (FT) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

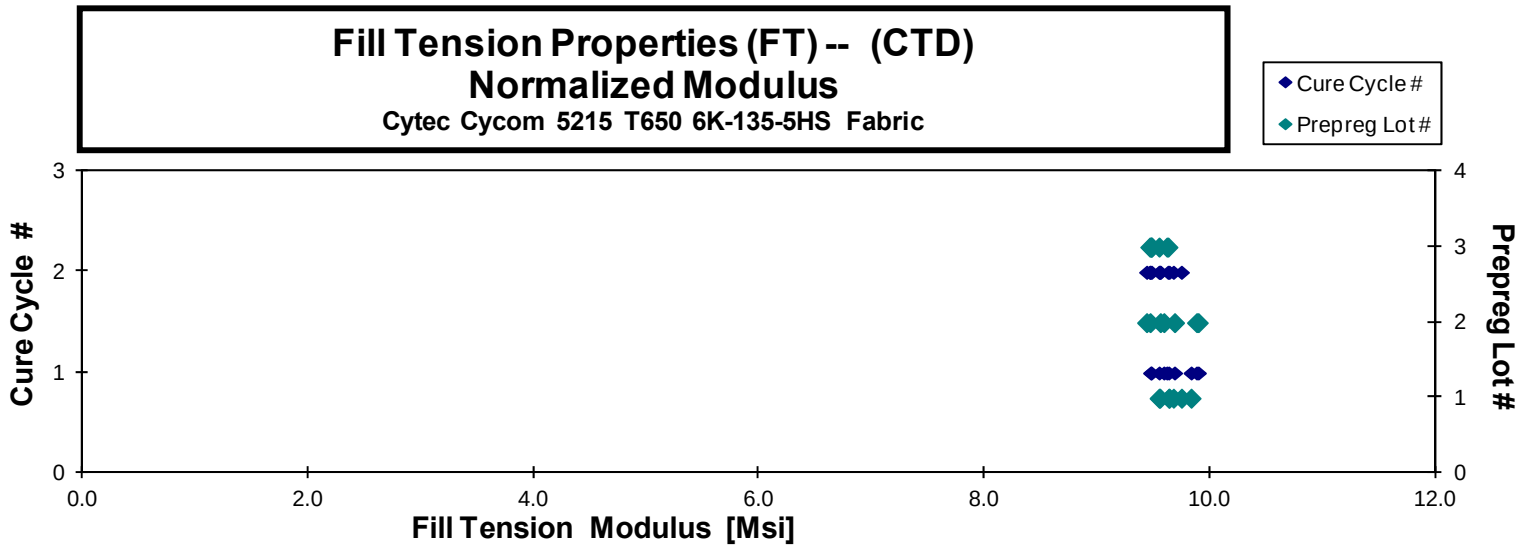
Normalizing t_{ply} [in]: 0.0155

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]
C0EUA114B	A	C1	1	1	119.988	9.592	0.125	8	LWT / LWB	0.0156	120.553	9.637
C0EUA115B	A	C1	1	1	112.448	9.446	0.125	8	LWT / LWB	0.0157	113.703	9.551
C0EUA116B	A	C1	1	1	114.638	9.702	0.126	8	LWB	0.0157	116.210	9.835
C0EUA214B	A	C2	1	2	122.316	9.633	0.126	8	LGM	0.0157	123.796	9.749
C0EUA215B	A	C2	1	2	121.795	9.636	0.125	8	LGM	0.0156	122.319	9.678
C0EUA216B	A	C2	1	2	123.811	9.472	0.126	8	LGM	0.0158	126.024	9.641
C0EUA217B	A	C2	1	2	117.984	9.371	0.126	8	LGM	0.0158	120.331	9.558
C0EUB116B	B	C1	2	1	117.815	9.613	0.124	8	LGM	0.0155	117.578	9.594
C0EUB117B	B	C1	2	1	117.670	9.664	0.124	8	LGM	0.0155	117.971	9.688
C0EUB118B	B	C1	2	1	123.047	9.946	0.123	8	LWT/LWB	0.0154	122.468	9.899
C0EUB119B	B	C1	2	1	120.652	9.967	0.123	8	LWB	0.0154	119.647	9.884
C0EUB216B	B	C2	2	2	120.327	9.531	0.123	8	LGM	0.0154	119.583	9.472
C0EUB217B	B	C2	2	2	118.939	9.490	0.125	8	LGM	0.0156	119.851	9.562
C0EUB218B	B	C2	2	2	117.823	9.393	0.125	8	LWT/LWB	0.0156	118.425	9.441
C0EUC114B	C	C1	3	1	107.254	9.414	0.125	8	LGM / LWB	0.0156	108.033	9.482
C0EUC115B	C	C1	3	1	104.125	9.529	0.125	8	LWT	0.0156	105.118	9.620
C0EUC116B	C	C1	3	1	101.903	9.417	0.125	8	LWT	0.0156	102.547	9.477
C0EUC214B	C	C2	3	2	108.288	9.507	0.125	8	LGM	0.0156	108.782	9.551
C0EUC215B	C	C2	3	2	101.811	9.353	0.126	8	LGM	0.0157	103.070	9.468
C0EUC216B	C	C2	3	2	108.481	9.577	0.125	8	LGM	0.0156	109.078	9.630
C0EUC217B	C	C2	3	2	105.060	9.479	0.124	8	LGM	0.0155	105.117	9.484

	Strength [ksi]	Modulus [Msi]
Average	114.580	9.559
Standard Dev.	7.375	0.165
Coeff. of Var. [%]	6.436	1.729
Min.	101.811	9.353
Max.	123.811	9.967
Number of Spec.	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0156	115.248	9.614
$Standard\ Dev._{norm}$		7.341	0.136
$Coeff.\ of\ Var.\ [\%]_{norm}$		6.369	1.417
Min.	0.0154	102.547	9.441
Max.	0.0158	126.024	9.899
Number of Spec.		21	21


Fill Tension Properties (FT) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Strength [ksi]


Fill Tension Properties (FT) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Modulus [Msi]

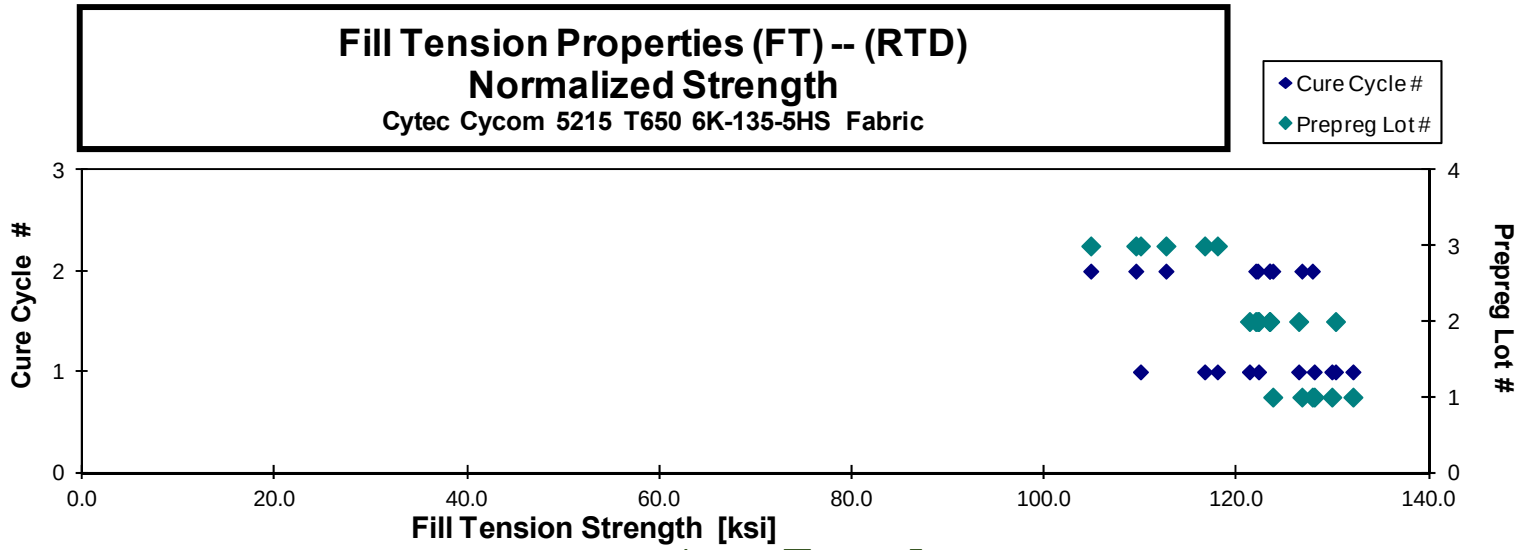
Fill Tension Properties (FT) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

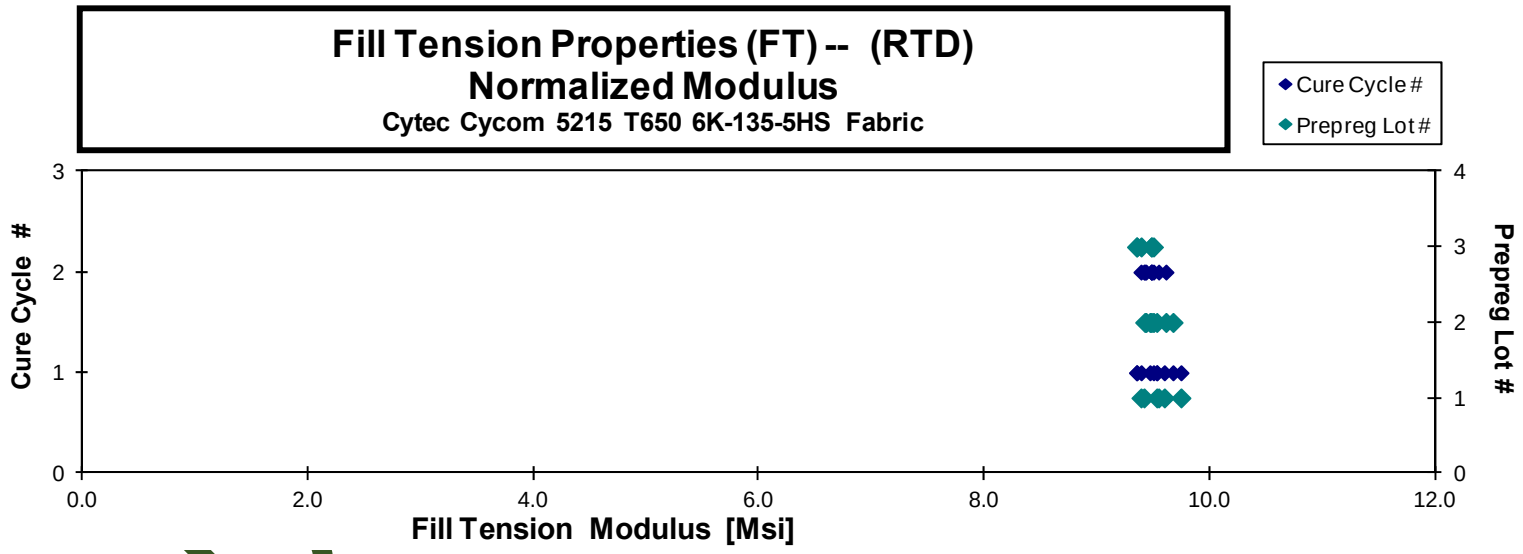
normalizing t_{ply} [in]: 0.0155

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]
C0EUA111A	A	C1	1	1	128.930	9.664	0.123	8	LWT/LWB	0.0154	128.047	9.598
C0EUA112A	A	C1	1	1	130.581	9.583	0.123	8	LWT/LWB	0.0154	129.879	9.531
C0EUA113A	A	C1	1	1	131.665	9.715	0.124	8	LWT/LWB	0.0155	132.072	9.745
C0EUA211A	A	C2	1	2	124.340	9.436	0.123	8	LWT/LWB	0.0154	123.739	9.390
C0EUA212A	A	C2	1	2	125.331	9.440	0.125	8	LWT/LWB	0.0157	126.763	9.547
C0EUA213A	A	C2	1	2	126.144	9.292	0.126	8	LWT/LWB	0.0157	127.857	9.418
C0EUB111A	B	C1	2	1	125.221	9.732	0.121	8	LWT/LWB	0.0151	122.259	9.502
C0EUB112A	B	C1	2	1	126.329	9.667	0.124	8	LGM	0.0155	126.431	9.675
C0EUB113A	B	C1	2	1	130.332	9.475	0.124	8	LWT/LWB	0.0155	130.262	9.470
C0EUB114A	B	C1	2	1	120.907	9.498	0.124	8	LWT/LGM/LWB	0.0156	121.313	9.530
C0EUB211A	B	C2	2	2	125.750	9.761	0.120	8	LGM	0.0151	122.167	9.483
C0EUB212A	B	C2	2	2	123.984	9.656	0.123	8	LWT/LGM/LWB	0.0154	123.417	9.612
C0EUB213A	B	C2	2	2	123.253	9.423	0.124	8	LGM	0.0155	123.403	9.435
C0EUB214A	B	C2	2	2	121.401	9.380	0.125	8	LWT/LGM/LWB	0.0156	121.972	9.424
C0EUC111A	C	C1	3	1	115.866	9.288	0.125	8	LGM	0.0156	116.661	9.352
C0EUC112A	C	C1	3	1	111.015	9.479	0.123	8	LWT/LWB	0.0154	109.985	9.391
C0EUC113A	C	C1	3	1	117.070	9.280	0.125	8	LWT/LWB	0.0156	117.982	9.353
C0EUC211A	C	C2	3	2	113.564	9.561	0.123	8	LWT/LGM/LWB	0.0154	112.633	9.483
C0EUC212A	C	C2	3	2	108.914	9.451	0.125	8	LGM/LWB	0.0156	109.500	9.501
C0EUC213A	C	C2	3	2	104.833	9.484	0.124	8	LGM	0.0155	104.818	9.483

Average	121.772	9.513	
Standard Dev.	7.564	0.149	
Coeff. of Var. [%]	6.212	1.569	
Min.	104.833	9.280	
Max.	131.665	9.761	
Number of Spec.	20	20	

$Average_{norm}$	0.0155	121.558	9.496	
$Standard\ Dev._{norm}$		7.528	0.103	
$Coeff.\ of\ Var.\ [\%]_{norm}$		6.193	1.088	
Min.	0.0151	104.818	9.352	
Max.	0.0157	132.072	9.745	
Number of Spec.		20	20	


Fill Tension Properties (FT) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Strength [ksi]


Fill Tension Properties (FT) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Modulus [Msi]

Fill Tension Properties (FT) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

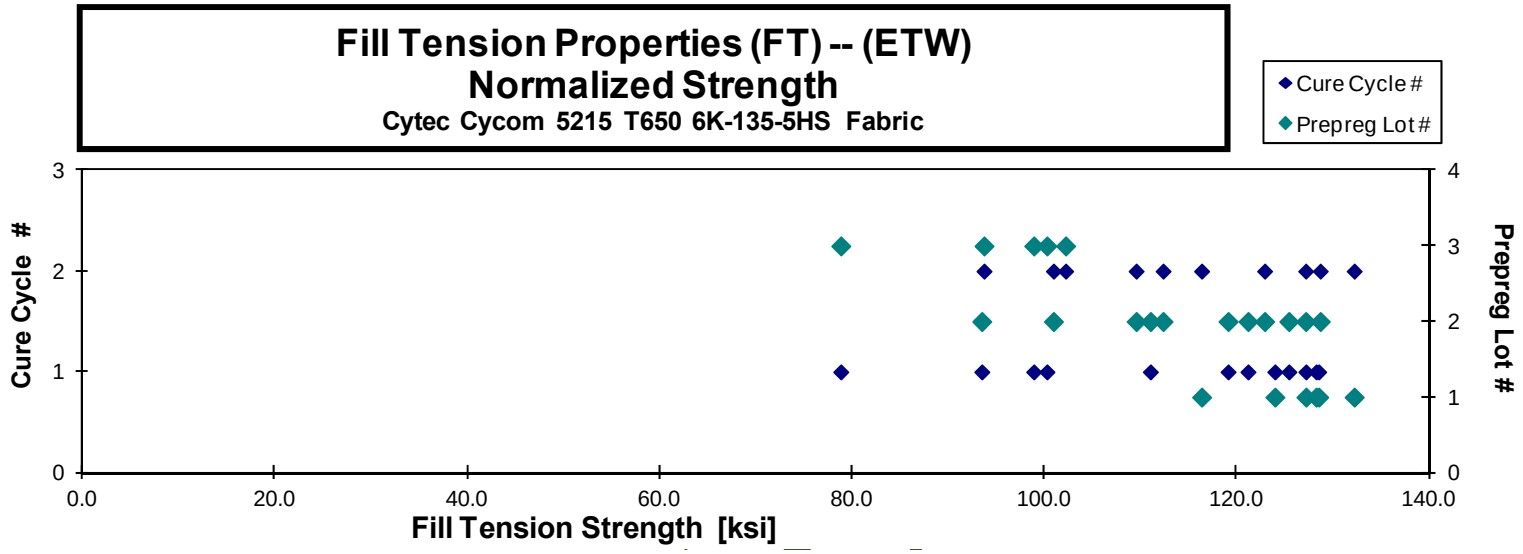
normalizing t_{ply} [in]: 0.0155

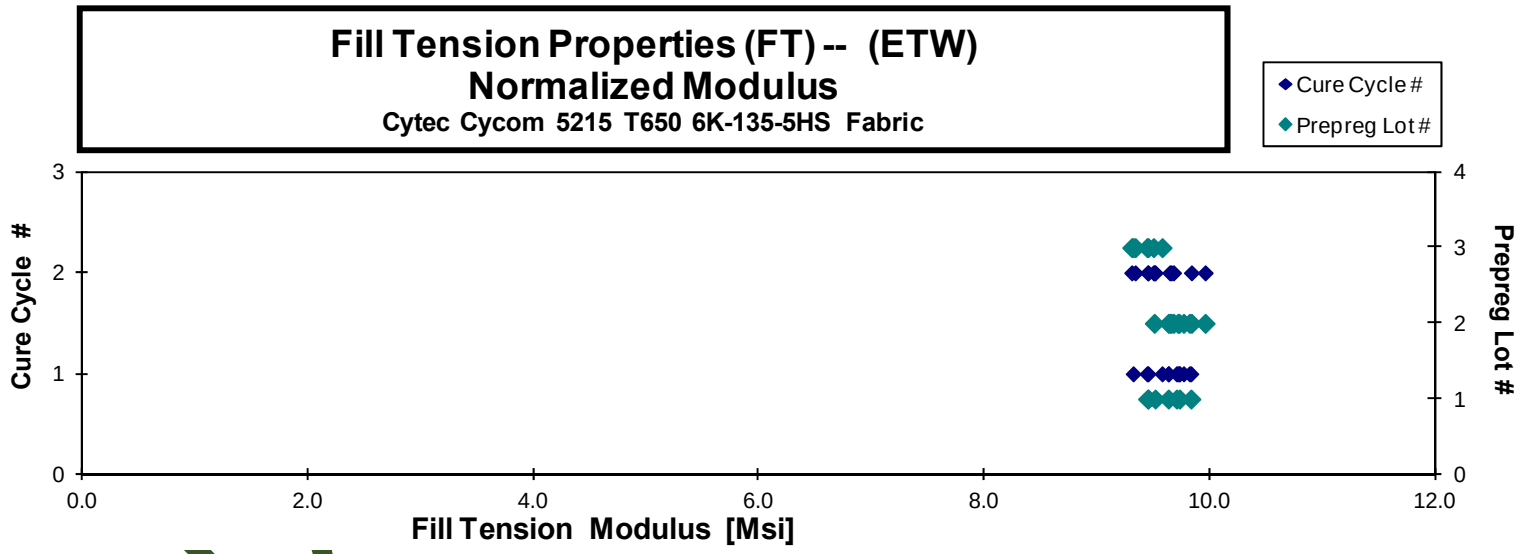
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0EUA117M	A	C1	1	1	122.203	9.497	0.126	8	LWB/LWT	0.0157	123.961	9.634
C0EUA118M	A	C1	1	1	126.556	9.683	0.126	8	LWB/LWT	0.0157	128.512	9.833
C0EUA119M	A	C1	1	1	125.414	9.492	0.127	8	LWB/LWT	0.0159	128.246	9.706
C0EUA11AM	A	C1	1	1	124.820	9.551	0.126	8	LGM/LWT	0.0158	127.185	9.732
C0EUA218M	A	C2	1	2	114.419	9.359	0.126	8	LAT/LWB	0.0158	116.341	9.516
C0EUA219M	A	C2	1	2	130.729	9.348	0.125	8	LWB/LWT	0.0157	132.205	9.454
C0EUA21AM*	A	C2	1	2		9.293	0.126	8	LIT	0.0158		9.449
C0EUB11BM	B	C1	2	1	127.382	9.869	0.122	8	LGM	0.0153	125.413	9.717
C0EUB11CM	B	C1	2	1	119.983	9.801	0.123	8	LWT/LAB	0.0154	119.096	9.729
C0EUB11DM	B	C1	2	1	93.985	9.873	0.123	8	LWB/LAT	0.0154	93.492	9.821
C0EUB11EM	B	C1	2	1	122.862	9.768	0.122	8	LGM/LAT	0.0153	121.161	9.633
C0EUB11FM	B	C1	2	1	112.269	9.878	0.123	8	LAT/LWB	0.0153	111.017	9.768
C0EUB21BM	B	C2	2	2	111.411	9.430	0.125	8	LAT/LGM	0.0156	112.339	9.509
C0EUB21CM	B	C2	2	2	122.233	9.594	0.125	8	LAT/LWB	0.0156	122.891	9.646
C0EUB21DM	B	C2	2	2	127.903	9.779	0.125	8	LGM	0.0156	128.676	9.838
C0EUB21EM	B	C2	2	2	126.822	9.933	0.124	8	LAT/LWB	0.0155	127.163	9.960
C0EUB21FM	B	C2	2	2	102.009	9.762	0.123	8	LAT	0.0153	100.940	9.659
C0EUB21GM	B	C2	2	2	109.081	9.639	0.125	8	LAT/LWB	0.0156	109.535	9.679
C0EUC117M	C	C1	3	1	78.085	9.355	0.125	8	LAT	0.0156	78.830	9.445
C0EUC118M*	C	C1	3	1		9.333	0.126	8	LIT/LWB	0.0157		9.453
C0EUC119M	C	C1	3	1	97.541	9.447	0.126	8	LAT/LWB	0.0157	98.891	9.577
C0EUC11AM	C	C1	3	1	100.219	9.318	0.124	8	LAT/LWB	0.0155	100.259	9.322
C0EUC218M	C	C2	3	2	93.410	9.470	0.124	8	LAT	0.0156	93.724	9.502
C0EUC219M*	C	C2	3	2		9.155	0.127	8	LIT/LWB	0.0158		9.339
C0EUC21AM	C	C2	3	2	101.876	9.279	0.124	8	LAT/LWB	0.0156	102.205	9.309

* Strength not reported due to bad failure mode

	Strength	Modulus
Average	113.237	9.556
Standard Dev.	14.406	0.228
Coeff. of Var. [%]	12.722	2.383
Min.	78.085	9.155
Max.	130.729	9.933
Number of Spec.	22	25

		$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0156	113.731	9.609
$Standard\ Dev._{norm}$		14.678	0.175
$Coeff.\ of\ Var.\ [\%]_{norm}$		12.906	1.820
Min.	0.0153	78.830	9.309
Max.	0.0159	132.205	9.960
Number of Spec.		22	25


Fill Tension Properties (FT) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Strength [ksi]


Fill Tension Properties (FT) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Tension Modulus [Msi]

4.3 Warp Compression Properties (WC)

Warp Compression Properties (WC) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

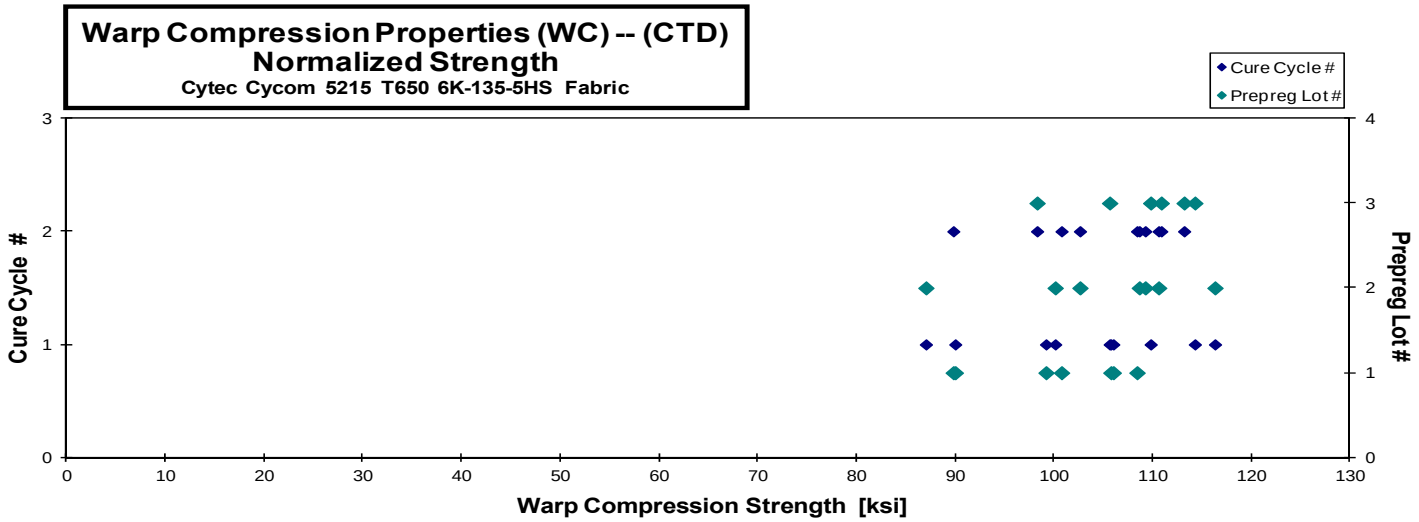
normalizing t_{ply} [in]: 0.0155

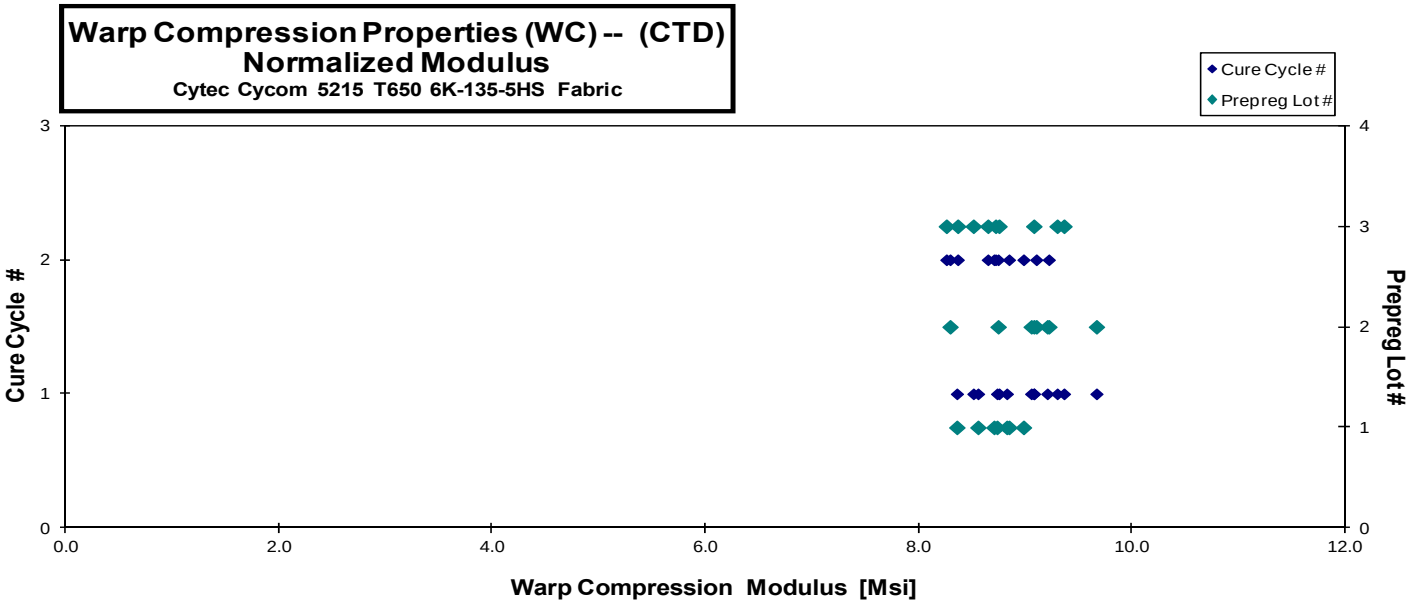
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0ELA116B	A	C1	1	1	107.063	8.645	**	0.123	8	BGM	0.0153	106.012	8.560
C0ELA117B	A	C1	1	1	107.065	8.846	0.045	0.123	8	BGM	0.0153	105.770	8.739
C0ELA118B	A	C1	1	1	90.394	8.398	0.047	0.123	8	BGM	0.0154	90.005	8.362
C0ELA119B	A	C1	1	1	100.770	8.970	0.077	0.122	8	BGM	0.0153	99.199	8.830
C0ELA215B	A	C2	1	2	98.976	8.693	0.058	0.126	8	BGM	0.0158	100.771	8.851
C0ELA216B	A	C2	1	2	89.918	8.720	0.074	0.124	8	BGM	0.0155	89.809	8.710
C0ELA217B	A	C2	1	2	107.022	8.871	0.066	0.126	8	BGM	0.0157	108.417	8.987
C0ELB116B	B	C1	2	1	88.172	9.798	0.107	0.122	8	BGM	0.0153	87.035	9.672
C0ELB117B	B	C1	2	1	117.543	9.308	**	0.123	8	BGM	0.0153	116.311	9.210
C0ELB118B	B	C1	2	1	102.135	9.241	**	0.122	8	BGM	0.0152	100.131	9.059
C0ELB119B	B	C1	2	1	*	9.500	**	0.119	8	ENDCRUSH	0.0148		9.085
C0ELB11AB	B	C1	2	2	112.003	8.507	**	0.121	8	BGM	0.0151	109.248	8.298
C0ELB215B	B	C2	2	2	109.075	9.261	**	0.124	8	BGM	0.0154	108.650	9.225
C0ELB216B	B	C2	2	2	111.608	9.190	**	0.123	8	BGM	0.0154	110.602	9.107
C0ELB217B	B	C2	2	2	102.749	8.758	**	0.124	8	BGM	0.0155	102.639	8.749
C0ELC116B	C	C1	3	1	106.937	8.621	**	0.123	8	BGM	0.0153	105.643	8.517
C0ELC117B	C	C1	3	1	*	9.218	**	0.122	8	BGM / ENDCRUSH	0.0153		9.084
C0ELC118B	C	C1	3	1	*	8.837	0.047	0.123	8	END CRUSH	0.0154		8.757
C0ELC119B	C	C1	3	1	116.677	9.499	0.113	0.121	8	BGM	0.0152	114.278	9.303
C0ELC11AB	C	C1	3	1	111.174	9.484	0.118	0.122	8	BGM	0.0153	109.799	9.367
C0ELC215B	C	C2	3	2	*	8.708	**	0.124	8	BGM / ENDCRUSH	0.0155		8.725
C0ELC216B	C	C2	3	2	97.536	8.305	**	0.125	8	BGM	0.0156	98.297	8.370
C0ELC217B	C	C2	3	2	110.706	8.640	**	0.124	8	BGM	0.0155	110.869	8.653
C0ELC218B	C	C2	3	2	112.342	8.202	**	0.125	8	BGM	0.0156	113.188	8.263

*Compressive strength not reported due to bad failure mode.
**Poisson's ratio is not repoted due to non linear data.

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	104.993	8.926	0.075
Standard Dev.	8.557	0.420	0.028
Coeff. of Var. [%]	8.150	4.701	37.391
Min.	88.172	8.202	0.045
Max.	117.543	9.798	0.118
Number of Spec.	20	24	10

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0154	104.334	8.853
$Standard\ Dev._{norm}$		8.304	0.366
$Coeff.\ of\ Var.\ [\%]_{norm}$		7.959	4.130
Min.	0.0148	87.035	8.263
Max.	0.0158	116.311	9.672
Number of Spec.		20	24


Warp Compression Properties (WC) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
130
0
1
2
3
4


Warp Compression Properties (WC) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
12.0
0
1
2
3
4

Warp Compression Properties (WC) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

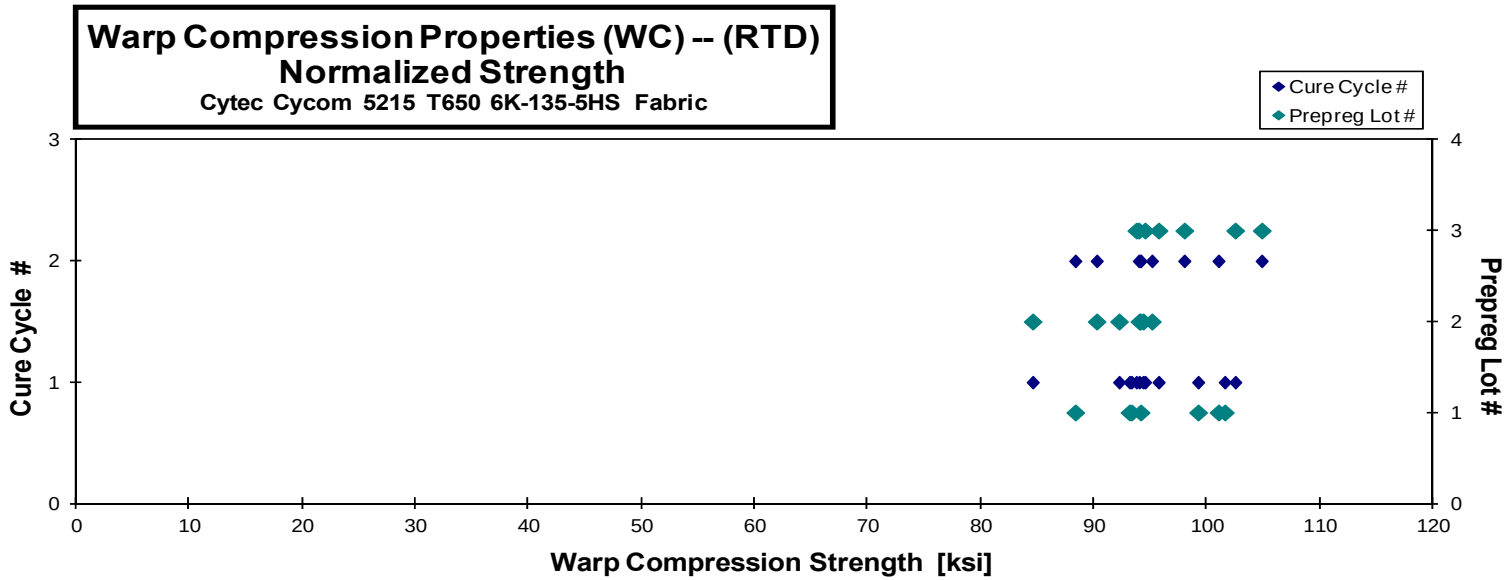
normalizing t_{ply} [in]: 0.0155

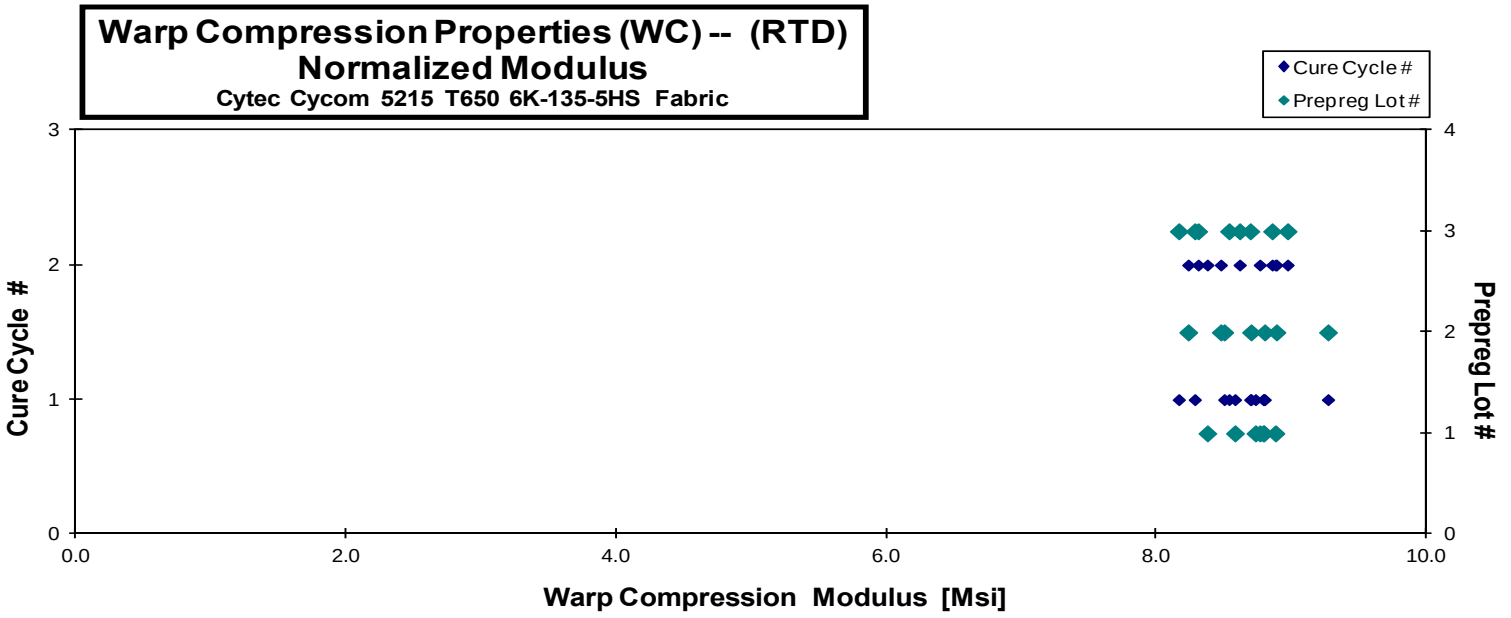
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0ELA111A	A	C1	1	1	97.373	9.178	0.051	0.119	8	BGM	0.0148	93.263	8.790
C0ELA112A	A	C1	1	1	102.277	9.063	0.063	0.120	8	BGM	0.0150	99.156	8.786
C0ELA113A	A	C1	1	1	95.303	8.937	0.045	0.121	8	BGM	0.0151	93.087	8.729
C0ELA114A	A	C1	1	1	102.378	8.650	0.047	0.123	8	BGM	0.0154	101.511	8.577
C0ELA211A	A	C2	1	2	103.490	8.583	0.058	0.121	8	BGM	0.0151	100.958	8.373
C0ELA212A	A	C2	1	2	88.711	8.919	0.048	0.123	8	BGM	0.0154	88.294	8.877
C0ELA213A	A	C2	1	2	94.606	8.811	0.071	0.123	8	BGM	0.0154	94.071	8.761
C0ELB111A	B	C1	2	1	93.639	8.634	0.051	0.122	8	BGM	0.0153	92.166	8.498
C0ELB112A	B	C1	2	1	95.591	9.427	0.054	0.122	8	BGM	0.0152	93.959	9.266
C0ELB113A	B	C1	2	1	86.315	8.880	0.045	0.121	8	BGM	0.0152	84.528	8.696
C0ELB114A	B	C1	2	1	95.969	8.953	0.050	0.122	8	BGM	0.0152	94.292	8.797
C0ELB211A	B	C2	2	2	97.756	8.555	0.028	0.119	8	BGM	0.0149	94.051	8.231
C0ELB212A	B	C2	2	2	97.212	9.085	0.061	0.121	8	BGM	0.0152	95.069	8.884
C0ELB213A	B	C2	2	2	92.258	8.667	0.039	0.121	8	BGM	0.0152	90.187	8.472
C0ELC111A	C	C1	3	1	104.848	8.895	0.057	0.121	8	BAT.	0.0151	102.438	8.691
C0ELC112A	C	C1	3	1	96.695	8.354	0.050	0.121	8	BGM	0.0151	94.459	8.161
C0ELC113A	C	C1	3	1	96.280	8.333	0.037	0.123	8	BGM	0.0154	95.659	8.280
C0ELC114A	C	C1	3	1	94.185	8.578	0.027	0.123	8	HAT	0.0154	93.691	8.533
C0ELC211A	C	C2	3	2		9.108	0.063	0.122	8	HIT	0.0153		8.967
C0ELC212A	C	C2	3	2	104.838	8.310	0.044	0.124	8	BGM	0.0155	104.782	8.305
C0ELC213A	C	C2	3	2	97.372	8.801	0.070	0.125	8	BGM	0.0156	97.935	8.852
C0ELC214A	C	C2	3	2	93.267	8.554	0.038	0.125	8	HAB/BGM	0.0156	93.906	8.612

*Compressive strength not reported due to bad failure mode.

Average	96.684	8.785	0.050
Standard Dev.	4.855	0.292	0.012
Coeff. of Var. [%]	5.022	3.323	24.044
Min.	86.315	8.310	0.027
Max.	104.848	9.427	0.071
Number of Spec.	21	22	22

$Average_{norm}$	0.0153	95.117	8.643
$Standard\ Dev._{norm}$		4.764	0.270
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.009	3.124
Min.	0.0148	84.528	8.161
Max.	0.0156	104.782	9.266
Number of Spec.		21	22


Warp Compression Properties (WC) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
0
1
2
3
4


Warp Compression Properties (WC) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
0
1
2
3
4

Warp Compression Properties (WC) -- (ETD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

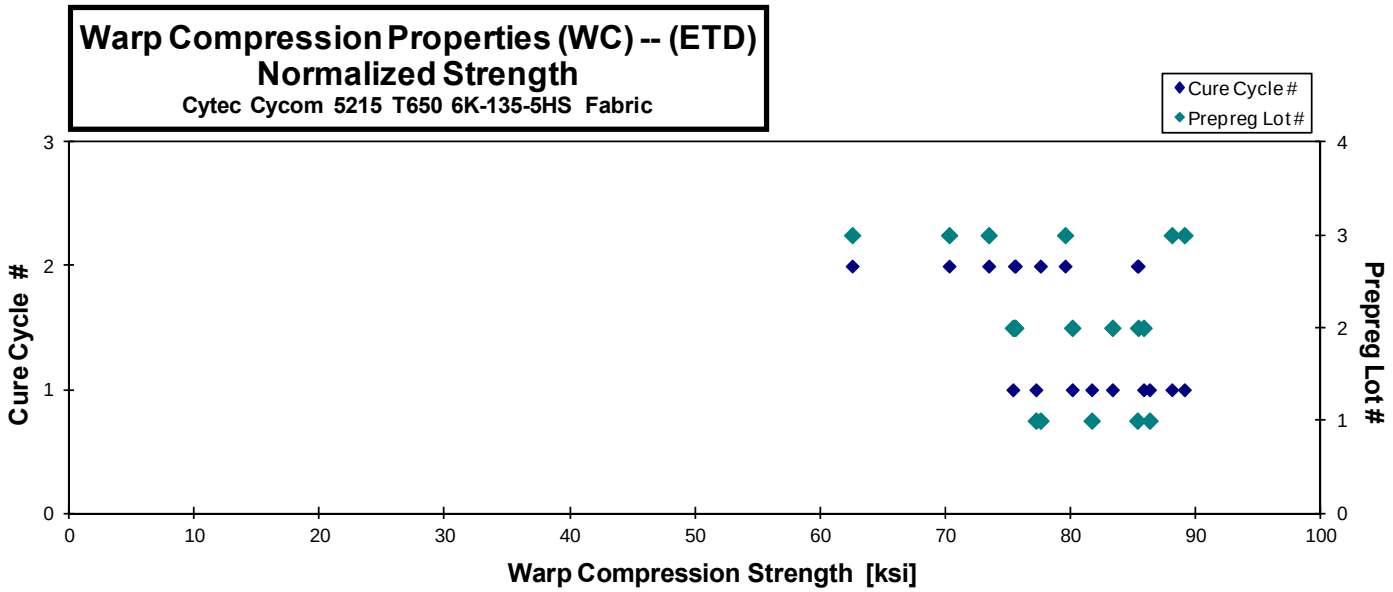
normalizing t_{ply} [in]: 0.0155

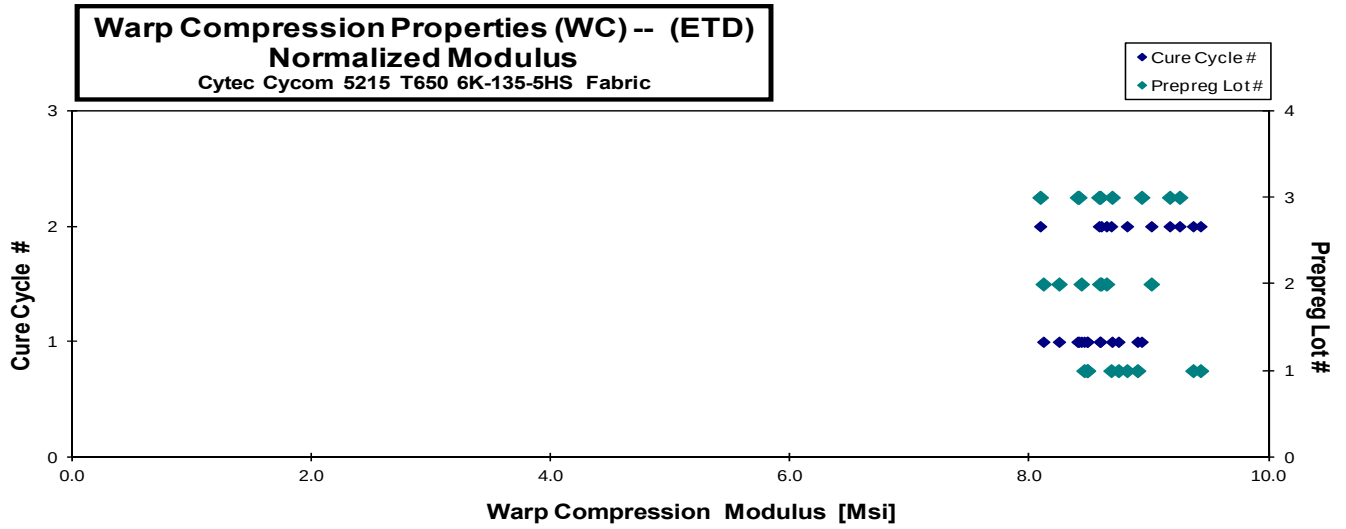
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0ELA11BL	A	C1	1	1	*	8.948	0.052	0.121	8	ENDCRUSH	0.0151		8.742
C0ELA11CL	A	C1	1	1	83.316	8.653	0.045	0.122	8	BGM	0.0152	81.692	8.484
C0ELA11DL	A	C1	1	1	87.194	8.566	0.040	0.123	8	BGM	0.0153	86.315	8.480
C0ELA11EL	A	C1	1	1	78.393	8.583	0.038	0.122	8	BGM	0.0153	77.234	8.456
C0ELA11FL	A	C1	1	1	*	9.038	0.044	0.122	8	HIT	0.0153		8.902
C0ELA219L	A	C2	1	2	*	8.945	0.053	0.120	8	BGM/ENDCRUSH	0.0150		8.681
C0ELA21AL	A	C2	1	2	78.385	9.462	0.034	0.123	8	BGM	0.0153	77.594	9.366
C0ELA21BL	A	C2	1	2	*	8.747	0.041	0.125	8	ENDCRUSH	0.0156		8.814
C0ELA21CL	A	C2	1	2	84.407	9.325	0.054	0.125	8	BGM	0.0157	85.338	9.428
C0ELB11BL	B	C1	2	1	87.988	8.803	0.037	0.121	8	BGM	0.0151	85.835	8.588
C0ELB11CL	B	C1	2	1	85.163	8.292	0.051	0.121	8	BGM	0.0152	83.343	8.115
C0ELB11DL	B	C1	2	1	81.319	8.368	0.056	0.122	8	BGM	0.0153	80.139	8.246
C0ELB11EL	B	C1	2	1	76.508	8.556	0.029	0.122	8	BGM	0.0153	75.397	8.431
C0ELB219L	B	C2	2	2	88.053	9.297	0.062	0.120	8	BGM	0.0150	85.402	9.017
C0ELB21AL	B	C2	2	2	76.614	8.722	0.032	0.122	8	BGM	0.0153	75.523	8.598
C0ELB21BL	B	C2	2	2	76.124	8.704	0.063	0.123	8	BGM	0.0154	75.582	8.642
C0ELC11BL	C	C1	3	1	88.546	8.444	**	0.123	8	BGM	0.0154	88.093	8.401
C0ELC11CL	C	C1	3	1	*	8.723	0.036	0.124	8	HIT	0.0154		8.689
C0ELC11DL	C	C1	3	1	*	8.887	0.050	0.125	8	HIT	0.0156		8.936
C0ELC11EL	C	C1	3	1	89.459	8.446	0.049	0.124	8	BGM	0.0154	89.098	8.412
C0ELC11FL	C	C1	3	1	*	8.618	0.053	0.124	8	HIT	0.0155		8.591
C0ELC219L	C	C2	3	2	74.401	8.192	0.034	0.122	8	BGM	0.0153	73.461	8.089
C0ELC21AL	C	C2	3	2	62.385	9.229	0.062	0.124	8	BGM	0.0155	62.553	9.254
C0ELC21BL	C	C2	3	2	79.292	8.550	0.040	0.124	8	BGM	0.0156	79.569	8.580
C0ELC21CL	C	C2	3	2	69.551	9.074	0.088	0.125	8	BGM	0.0157	70.299	9.171

*Compressive strength is not reported due to bad failure mode.
**Poisson's ratio not reported because of faulty transverse strain reading.

Average	80.394	8.767	0.048
Standard Dev.	7.252	0.333	0.013
Coeff. of Var. [%]	9.021	3.804	27.785
Min.	62.385	8.192	0.029
Max.	89.459	9.462	0.088
Number of Spec.	18	25	24

$Average_{norm}$	0.0154	79.581	8.685
$Standard\ Dev._{norm}$		6.888	0.358
$Coeff.\ of\ Var.\ [\%]_{norm}$		8.655	4.127
Min.	0.0150	62.553	8.089
Max.	0.0157	89.098	9.428
Number of Spec.		18	25


Warp Compression Properties (WC) -- (ETD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
0
1
2
3
4


Warp Compression Properties (WC) -- (ETD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
0
1
2
3
4

Warp Compression Properties (WC) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

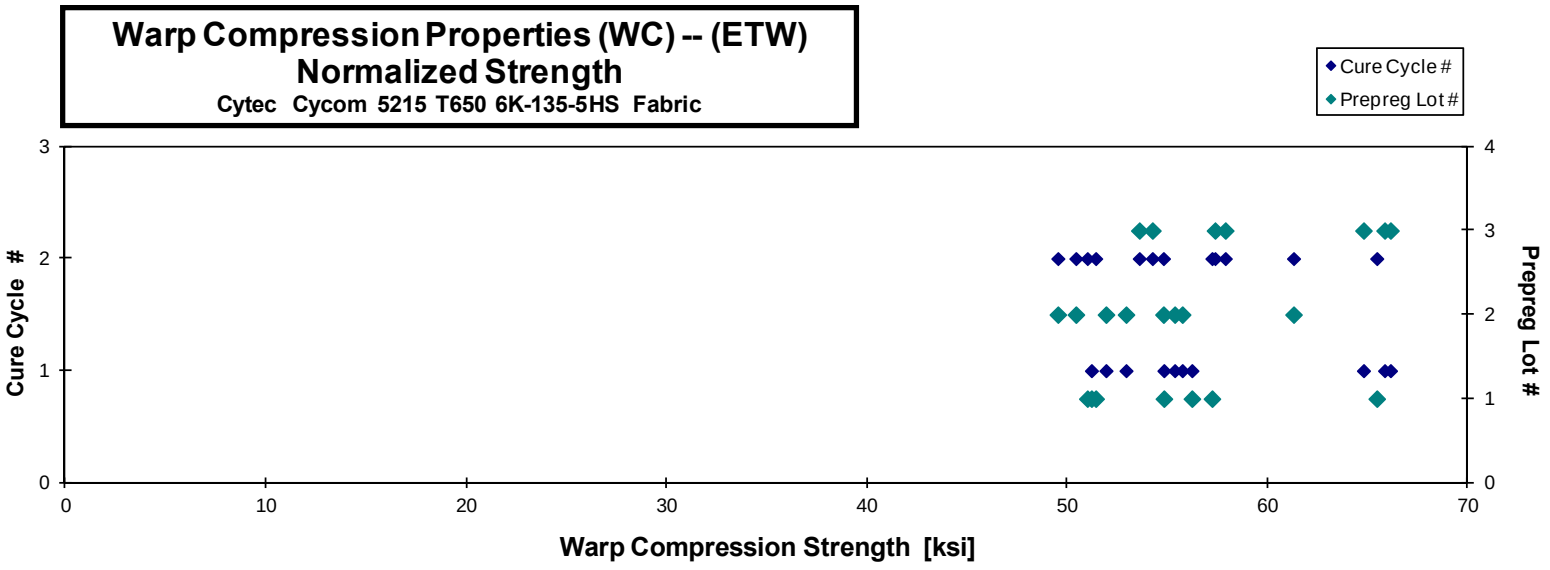
normalizing t_{ply} [in]: 0.0155

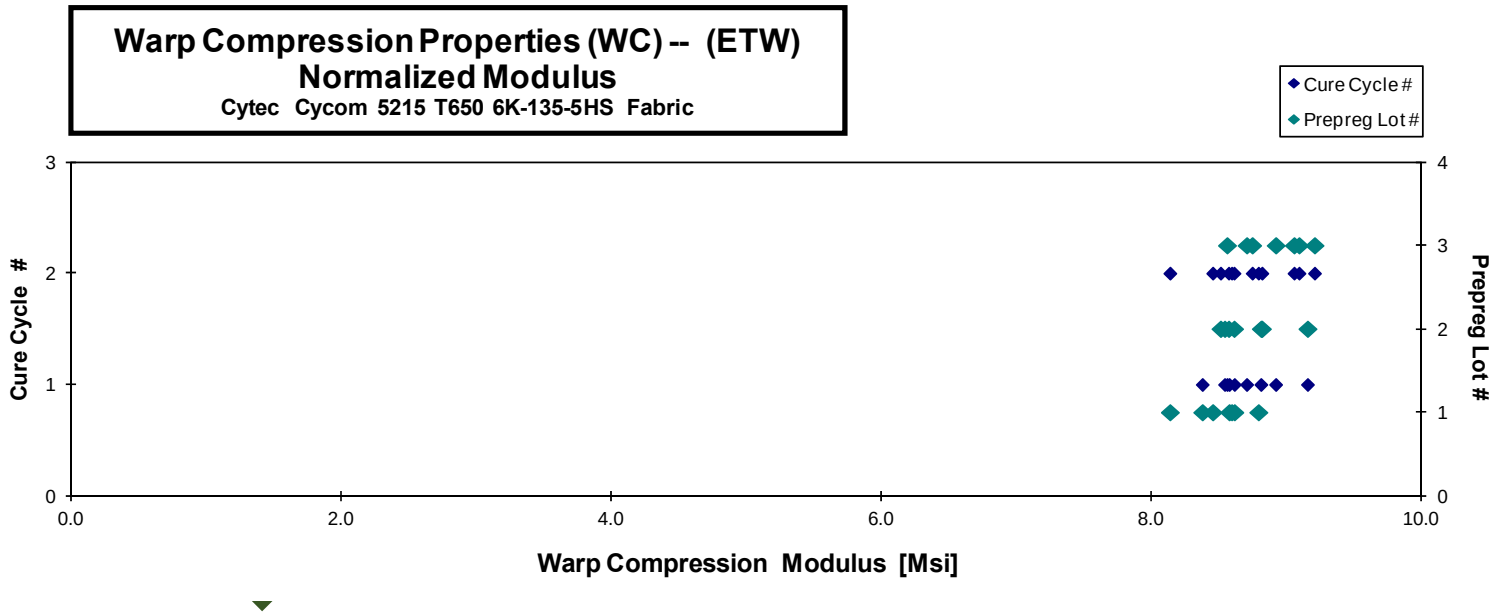
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0ELA11GM	A	C1	1	1		8.466	0.043	0.123	8	BGM	0.0153		8.383
C0ELA11HM	A	C1	1	1		8.678	0.033	0.123	8	BGM	0.0154		8.620
C0ELA11IM	A	C1	1	1		8.659	0.044	0.123	8	HAT	0.0154		8.582
C0ELA11JM	A	C1	1	1	51.748			0.123	8	HAT	0.0153	51.199	
C0ELA11KM	A	C1	1	1	56.364			0.124	8	BAT	0.0155	56.213	
C0ELA11LM	A	C1	1	1	55.411			0.123	8	BGM	0.0153	54.815	
C0ELA21DM	A	C2	1	2		8.671	0.049	0.126	8	HGM	0.0157		8.798
C0ELA21EM	A	C2	1	2		8.494	0.047	0.126	8	BGM	0.0157		8.600
C0ELA21FM	A	C2	1	2		8.380	0.055	0.125	8	BGM	0.0156		8.460
C0ELA21GM	A	C2	1	2		8.071	0.039	0.125	8	BGM	0.0156		8.143
C0ELA21HM	A	C2	1	2	50.855			0.124	8	BGM	0.0155	50.992	
C0ELA21IM	A	C2	1	2	51.273			0.124	8	BAB	0.0155	51.411	
C0ELA21JM	A	C2	1	2	57.062			0.124	8	BGM	0.0155	57.216	
C0ELA21KM	A	C2	1	2	65.442			0.124	8	HGM	0.0155	65.442	
C0ELB11GM	B	C1	2	1		8.903	*	0.123	8	BGM	0.0154		8.817
C0ELB11HM	B	C1	2	1		8.593	*	0.123	8	HIT	0.0154		8.548
C0ELB11IM	B	C1	2	1		9.214	0.057	0.123	8	BAB	0.0154		9.162
C0ELB11JM	B	C1	2	1	53.290			0.123	8	BGM	0.0154	52.925	
C0ELB11KM	B	C1	2	1	55.593			0.123	8	BGM	0.0154	55.354	
C0ELB11LM	B	C1	2	1	52.567			0.122	8	HGM	0.0153	51.924	
C0ELB11MM	B	C1	2	1	56.366			0.123	8	BGM	0.0153	55.730	
C0ELB21DM	B	C2	2	2		8.857	0.075	0.124	8	BGM	0.0154		8.825
C0ELB21EM	B	C2	2	2		8.676	0.024	0.123	8	HGM	0.0153		8.578
C0ELB21FM	B	C2	2	2		8.541	0.055	0.124	8	BGM	0.0155		8.518
C0ELB21GM	B	C2	2	2		8.613	0.022	0.124	8	BGM	0.0155		8.618
C0ELB21HM	B	C2	2	2	50.936			0.123	8	BGM	0.0153	50.422	
C0ELB21IM	B	C2	2	2	55.179			0.123	8	BGM	0.0154	54.793	
C0ELB21JM	B	C2	2	2	62.038			0.123	8	BGM	0.0153	61.287	
C0ELB21KM	B	C2	2	2	49.790			0.123	8	BGM	0.0154	49.523	
C0ELC11GM	C	C1	3	1		8.697	0.047	0.124	8	BAT	0.0155		8.711
C0ELC11HM	C	C1	3	1		8.569	0.039	0.124	8	BGM	0.0155		8.566
C0ELC11IM	C	C1	3	1		8.957	0.048	0.124	8	BGM	0.0154		8.927
C0ELC11JM	C	C1	3	1	64.296			0.125	8	BGM	0.0156	64.780	
C0ELC11KM	C	C1	3	1	65.470			0.125	8	BGM	0.0156	65.831	
C0ELC11LM	C	C1	3	1	65.404			0.125	8	BGM	0.0157	66.125	
C0ELC21DM	C	C2	3	2		9.170	0.034	0.125	8	HGM	0.0156		9.214
C0ELC21EM	C	C2	3	2		8.662	0.036	0.125	8	BGM	0.0157		8.752
C0ELC21FM	C	C2	3	2		9.043	0.056	0.124	8	BGM	0.0155		9.062
C0ELC21GM	C	C2	3	2		8.994	0.044	0.125	8	BGM	0.0157		9.099
C0ELC21HM	C	C2	3	2	53.025			0.125	8	BGM	0.0157	53.588	
C0ELC21IM	C	C2	3	2	53.634			0.125	8	BGM	0.0157	54.239	
C0ELC21JM	C	C2	3	2	57.022			0.126	8	BGM	0.0157	57.880	
C0ELC21KM	C	C2	3	2	56.299			0.126	8	BAB	0.0158	57.366	

*Poisson's ratio is not reported due to non linear data.

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	56.321	8.710	0.045
Standard Dev.	5.065	0.272	0.013
Coeff. of Var. [%]	8.993	3.125	28.176
Min.	49.790	8.071	0.022
Max.	65.470	9.214	0.075
Number of Spec.	22	21	19

		$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0155	56.321	8.713
$Standard\ Dev._{norm}$		5.249	0.269
$Coeff.\ of\ Var.\ [\%]_{norm}$		9.320	3.093
Min.	0.0153	49.523	8.143
Max.	0.0158	66.125	9.214
Number of Spec.		22	21


Warp Compression Properties (WC) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Strength [ksi]
0
10
20
30
40
50
60
70
0
1
2
3
4


Warp Compression Properties (WC) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Warp Compression Modulus [Msi]
0.0
2.0
4.0
6.0
8.0
10.0
0
1
2
3
4

4.4 Fill Compression Properties (FC)

Fill Compression Properties (FC) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

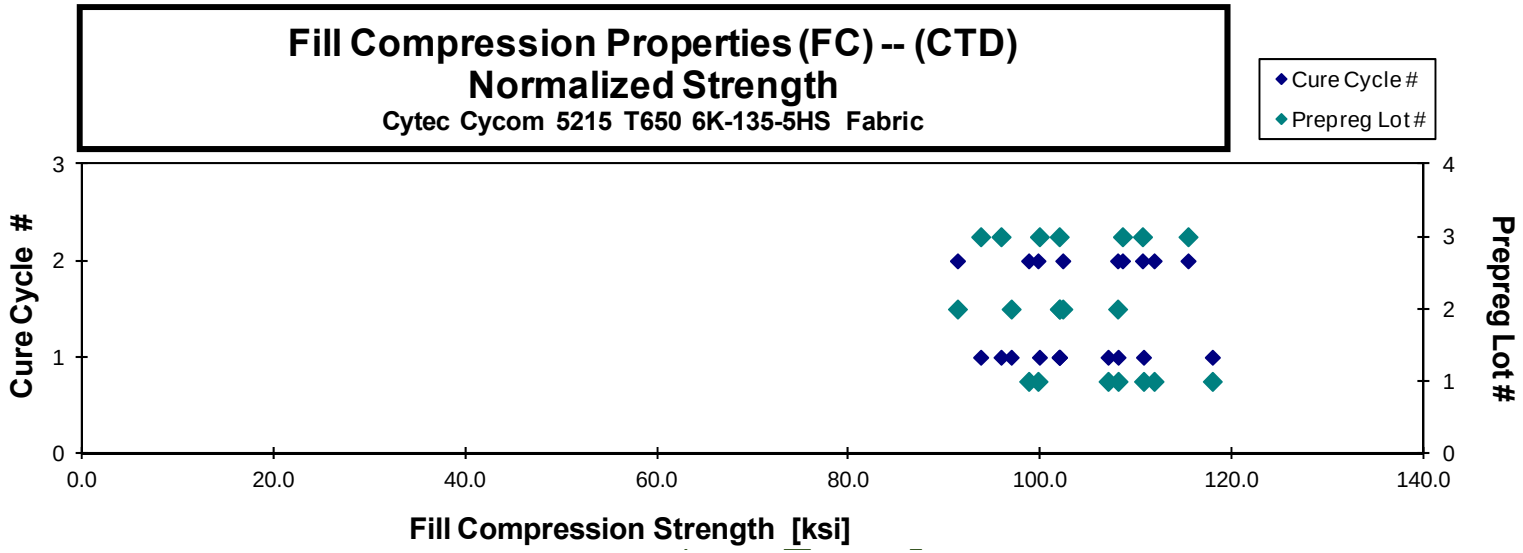
normalizing t_{ply} [in]: 0.0155

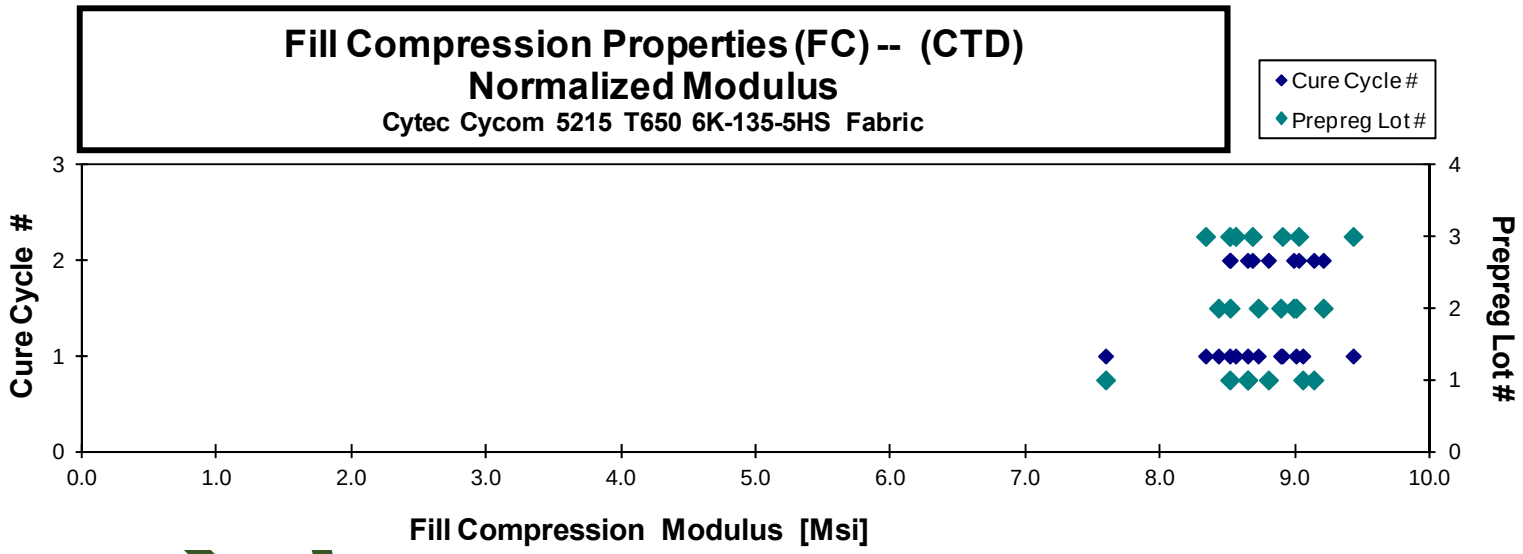
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0EZA115B	A	C1	1	1	116.871	8.976	*	0.125	8	BGM	0.0156	117.908	9.056
C0EZA116B	A	C1	1	1	107.594	8.609	*	0.125	8	BGM	0.0156	108.071	8.647
C0EZA117B	A	C1	1	1	110.135	8.468	*	0.125	8	BGM	0.0156	110.727	8.514
C0EZA118B	A	C1	1	1	106.062	7.524	*	0.125	8	BGM	0.0156	107.032	7.593
C0EZA214B	A	C2	1	2	99.198	8.755	0.078	0.125	8	BGM	0.0156	99.718	8.801
C0EZA215B	A	C2	1	2	111.606	8.629	0.079	0.124	8	BGM	0.0155	111.831	8.646
C0EZA216B	A	C2	1	2	98.794	9.143	*	0.124	8	BGM	0.0155	98.741	9.138
C0EZB115B	B	C1	2	1	103.421	9.020	*	0.122	8	BGM	0.0153	101.961	8.892
C0EZB116B	B	C1	2	1	102.431	8.768	*	0.123	8	BGM	0.0154	101.935	8.725
C0EZB117B	B	C1	2	1	**	9.087	*	0.123	8	BGM/END CRUSH	0.0154		9.006
C0EZB118B	B	C1	2	1	97.009	8.438	*	0.124	8	BGM	0.0155	96.918	8.430
C0EZB214B	B	C2	2	2	92.059	9.061	*	0.123	8	BGM	0.0154	91.316	8.988
C0EZB215B	B	C2	2	2	102.032	8.494	*	0.124	8	BGM	0.0155	102.306	8.517
C0EZB216B	B	C2	2	2	107.939	9.201	*	0.124	8	BGM	0.0155	108.026	9.208
C0EZC115B	C	C1	3	1	97.275	8.458	*	0.122	8	BGM	0.0153	95.863	8.335
C0EZC116B	C	C1	3	1	104.088	9.093	*	0.121	8	BAT	0.0152	101.933	8.904
C0EZC117B	C	C1	3	1	101.631	9.596	0.097	0.122	8	BGM	0.0152	99.869	9.430
C0EZC118B	C	C1	3	1	96.010	8.765	*	0.121	8	BGM	0.0151	93.738	8.558
C0EZC214B	C	C2	3	2	110.981	8.705	*	0.121	8	BGM	0.0152	108.534	8.513
C0EZC215B	C	C2	3	2	112.189	8.805	*	0.122	8	BGM	0.0153	110.621	8.682
C0EZC216B	C	C2	3	2	118.232	9.249	*	0.121	8	BGM	0.0151	115.372	9.026

****Compressive strength not reported as unacceptable failure mode was observed.**
***Poisson's ratio is not reported for all specimens due to non linear data.**

Average	104.778	8.802	0.085
Standard Dev.	7.120	0.424	0.011
Coeff. of Var. [%]	6.795	4.813	12.518
Min.	92.059	7.524	0.078
Max.	118.232	9.596	0.097
Number of Spec.	20	21	3

$Average_{norm}$	0.0154	104.121	8.743
$Standard\ Dev._{norm}$		7.242	0.388
$Coeff.\ of\ Var.\ [\%]_{norm}$		6.956	4.432
Min.	0.0151	91.316	7.593
Max.	0.0156	117.908	9.430
Number of Spec.		20	21


Fill Compression Properties (FC) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Compression Strength [ksi]


Fill Compression Properties (FC) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Fill Compression Modulus [Msi]

Fill Compression Properties (FC) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

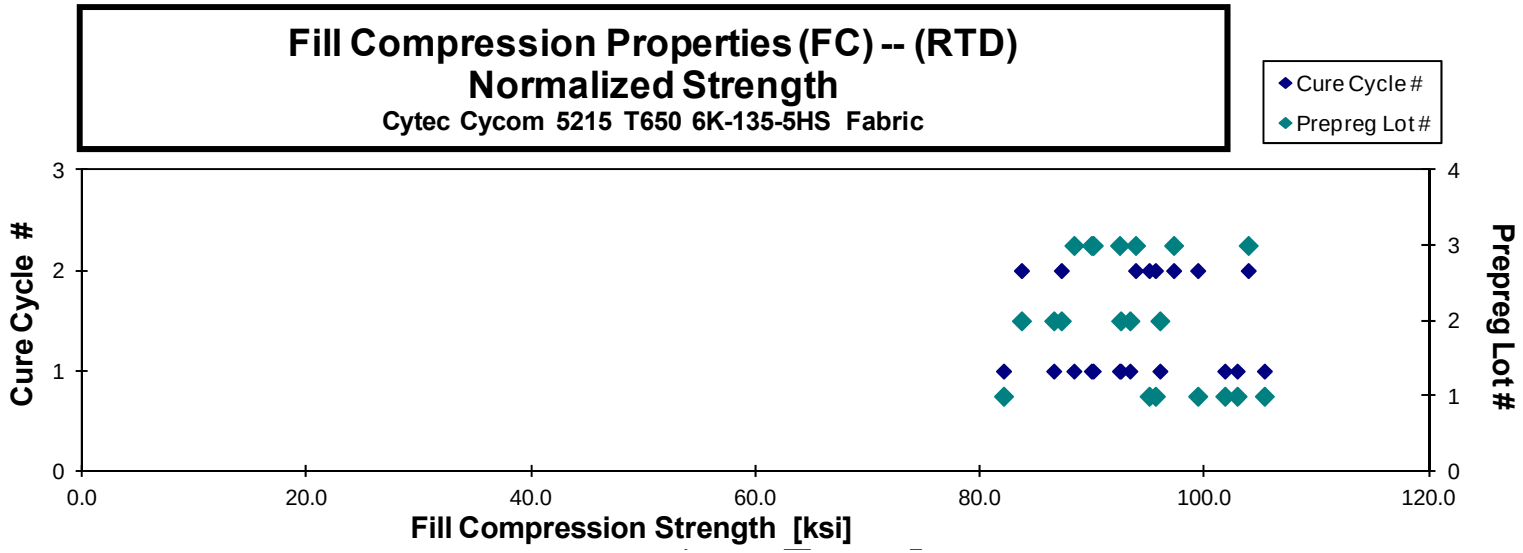
normalizing t_{ply} [in]: 0.0155

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]
C0EZA111A	A	C1	1	1	105.488	9.278	0.041	0.120	8	BGM	0.0150	101.787	8.953
C0EZA112A	A	C1	1	1	105.899	8.815	0.036	0.123	8	BGM	0.0154	105.315	8.766
C0EZA113A	A	C1	1	1	102.240	9.215	0.063	0.125	8	BGM	0.0156	102.886	9.273
C0EZA114A	A	C1	1	1	81.732	8.515	0.049	0.125	8	BGM	0.0156	82.073	8.551
C0EZA211A	A	C2	1	2	102.148	8.476	0.067	0.121	8	BGM	0.0151	99.375	8.246
C0EZA212A	A	C2	1	2	96.509	9.166	0.042	0.122	8	BGM	0.0153	95.043	9.027
C0EZA213A	A	C2	1	2	95.834	8.445	0.046	0.124	8	BGM	0.0155	95.602	8.424
C0EZB111A	B	C1	2	1	89.096	8.382	0.050	0.120	8	BGM	0.0151	86.546	8.142
C0EZB112A	B	C1	2	1	94.758	8.672	0.071	0.122	8	BGM	0.0153	93.332	8.542
C0EZB113A	B	C1	2	1	93.679	8.426	0.042	0.122	8	BGM	0.0153	92.508	8.320
C0EZB114A	B	C1	2	1	96.446	8.439	0.074	0.123	8	BGM	0.0154	96.005	8.400
C0EZB211A	B	C2	2	2	*	8.864	0.027	0.120	8	HIT	0.0150		8.592
C0EZB212A	B	C2	2	2	87.800	9.035	0.034	0.123	8	BGM	0.0154	87.222	8.975
C0EZB213A	B	C2	2	2	84.281	8.576	0.046	0.123	8	BGM	0.0154	83.669	8.513
C0EZC111A	C	C1	3	1	90.831	8.938	0.026	0.123	8	BGM	0.0154	90.062	8.862
C0EZC112A	C	C1	3	1	89.339	8.919	0.049	0.123	8	BGM	0.0153	88.342	8.820
C0EZC113A	C	C1	3	1	90.573	8.594	0.054	0.123	8	BGM	0.0154	89.903	8.531
C0EZC114A	C	C1	3	1	92.747	8.706	0.058	0.124	8	BGM	0.0154	92.411	8.674
C0EZC211A	C	C2	3	2	108.620	9.704	0.081	0.119	8	BGM	0.0148	103.876	9.281
C0EZC212A	C	C2	3	2	96.671	9.214	0.065	0.120	8	BGM	0.0150	93.838	8.944
C0EZC213A	C	C2	3	2	99.123	9.035	0.035	0.122	8	BGM	0.0152	97.231	8.863

*Strength not reported due to bad failure mode

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	95.191	8.829	0.050
Standard Dev.	7.238	0.356	0.016
Coeff. of Var. [%]	7.604	4.028	30.853
Min.	81.732	8.382	0.026
Max.	108.620	9.704	0.081
Number of Spec.	20	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0153	93.851	8.700
$Standard\ Dev._{norm}$		6.616	0.316
$Coeff.\ of\ Var.\ [\%]_{norm}$		7.050	3.629
Min.	0.0148	82.073	8.142
Max.	0.0156	105.315	9.281
Number of Spec.		20	21


Fill Compression Properties (FC) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Fill Compression Strength [ksi]
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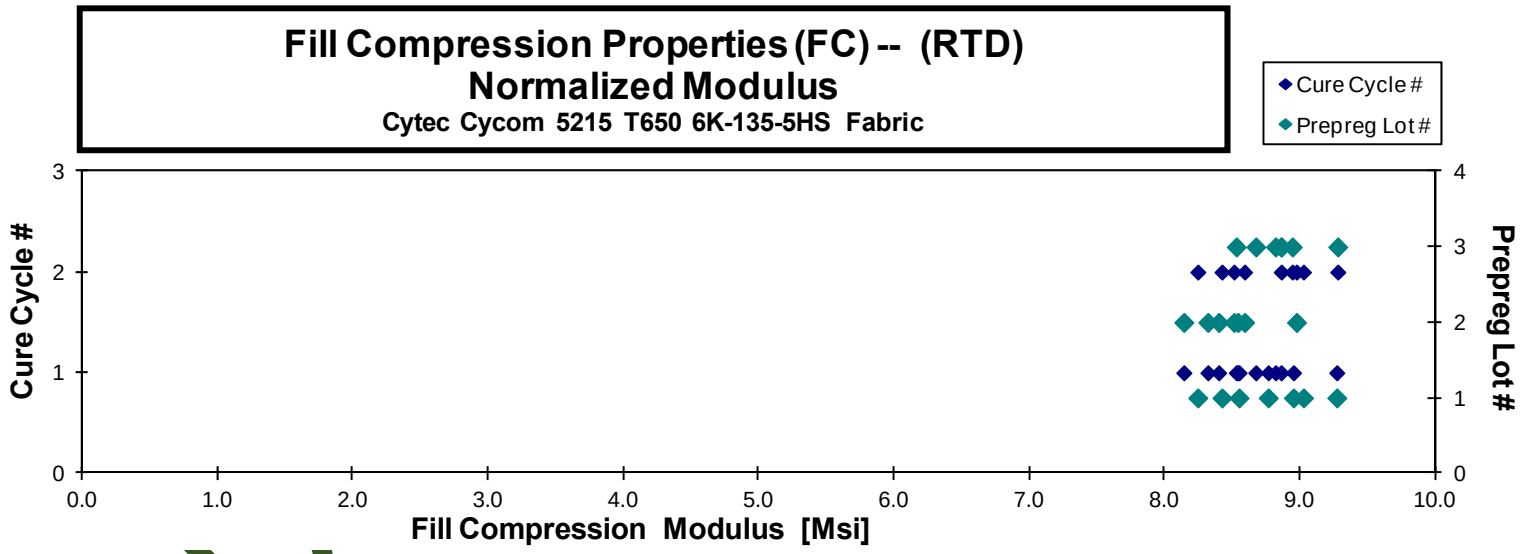
20.0
40.0
60.0
80.0
100.0
120.0


Fill Compression Properties (FC) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Fill Compression Modulus [Msi]
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0

Fill Compression Properties (FC) -- (ETD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

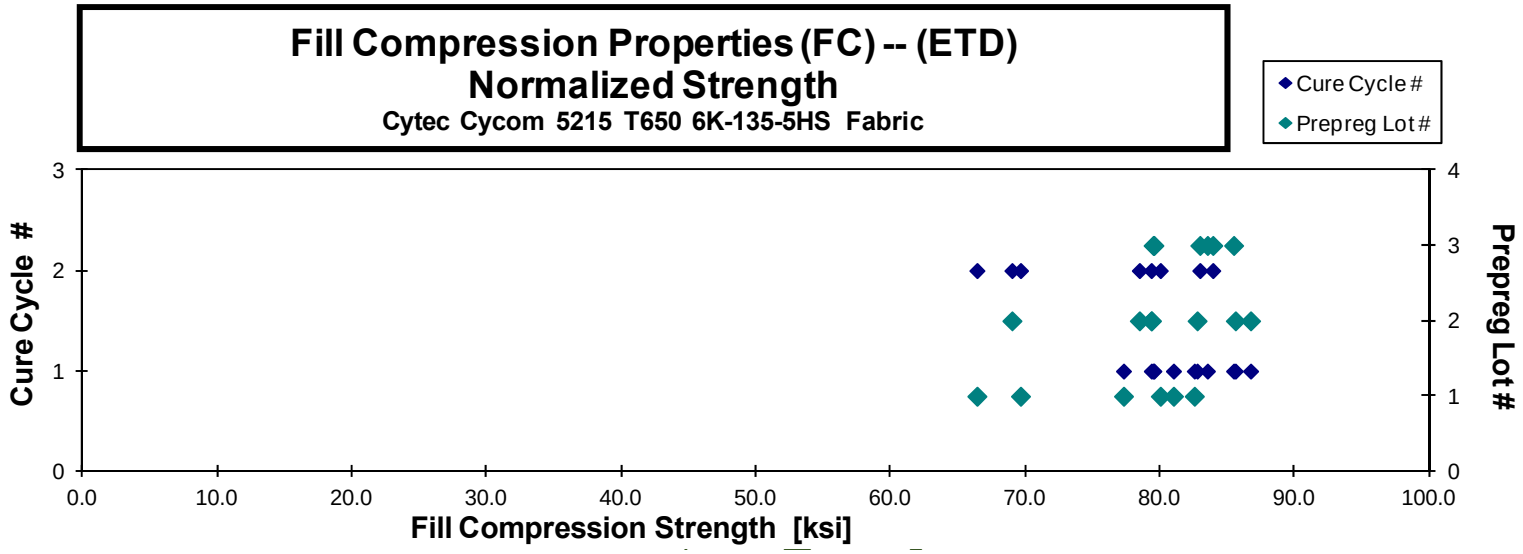
normalizing t_{ply} [in]: 0.0155

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]
C0EZA119L	A	C1	1	1	80.969	8.340	0.051	0.124	8	BGM	0.0155	81.012	8.344
C0EZA11AL	A	C1	1	1	81.945	8.092	0.043	0.125	8	BGM	0.0156	82.561	8.153
C0EZA11BL	A	C1	1	1	79.955	9.373	0.054	0.120	8	BGM	0.0150	77.301	9.062
C0EZA11CL	A	C1	1	1	*	8.988	0.048	0.123	8	HIT	0.0154		8.912
C0EZA217L	A	C2	1	2	79.404	8.408	0.036	0.125	8	BGM	0.0156	80.034	8.474
C0EZA218L	A	C2	1	2	66.061	8.340	0.034	0.125	8	BGM	0.0156	66.416	8.385
C0EZA219L	A	C2	1	2	71.183	8.885	0.048	0.121	8	BGM	0.0152	69.652	8.694
C0EZB119L	B	C1	2	1	81.562	8.799	0.067	0.121	8	BGM	0.0151	79.369	8.562
C0EZB11AL	B	C1	2	1	86.630	8.726	0.067	0.123	8	BGM	0.0153	85.606	8.622
C0EZB11BL	B	C1	2	1	83.724	8.156	0.043	0.123	8	BAB	0.0153	82.767	8.063
C0EZB11CL	B	C1	2	1	87.525	8.844	0.026	0.123	8	BGM	0.0154	86.737	8.765
C0EZB217L	B	C2	2	2	78.503	8.489	0.079	0.124	8	BGM	0.0155	78.482	8.487
C0EZB218L	B	C2	2	2	79.462	8.390	0.037	0.124	8	BGM	0.0155	79.355	8.379
C0EZB219L	B	C2	2	2	71.547	8.766	0.040	0.120	8	BGM	0.0150	69.018	8.457
C0EZC119L	C	C1	3	1	80.006	8.819	0.026	0.123	8	BGM	0.0154	79.500	8.763
C0EZC11AL	C	C1	3	1	80.752	8.772	0.089	0.122	8	BGM	0.0153	79.558	8.642
C0EZC11BL	C	C1	3	1	84.063	8.842	0.034	0.123	8	BGM	0.0154	83.532	8.786
C0EZC11CL	C	C1	3	1	85.942	8.648	0.060	0.123	8	BGM/HGM	0.0154	85.480	8.601
C0EZC217L	C	C2	3	2	84.587	8.731	0.055	0.122	8	BGM	0.0152	82.972	8.564
C0EZC218L	C	C2	3	2	85.774	8.509	0.026	0.121	8	BGM	0.0152	83.929	8.326
C0EZC219L	C	C2	3	2	*	8.691	0.030	0.120	8	ENDCRUSH	0.0150		8.385

*Compressive strength is not reported as unacceptable failure mode was observed.

Average	80.505	8.648	0.047
Standard Dev.	5.627	0.298	0.017
Coeff. of Var. [%]	6.989	3.449	36.924
Min.	66.061	8.092	0.026
Max.	87.525	9.373	0.089
Number of Spec.	19	21	21

$Average_{norm}$	0.0153	79.646	8.544
$Standard\ Dev._{norm}$		5.674	0.242
$Coeff.\ of\ Var.\ [\%]_{norm}$		7.124	2.827
Min.	0.0150	66.416	8.063
Max.	0.0156	86.737	9.062
Number of Spec.		19	21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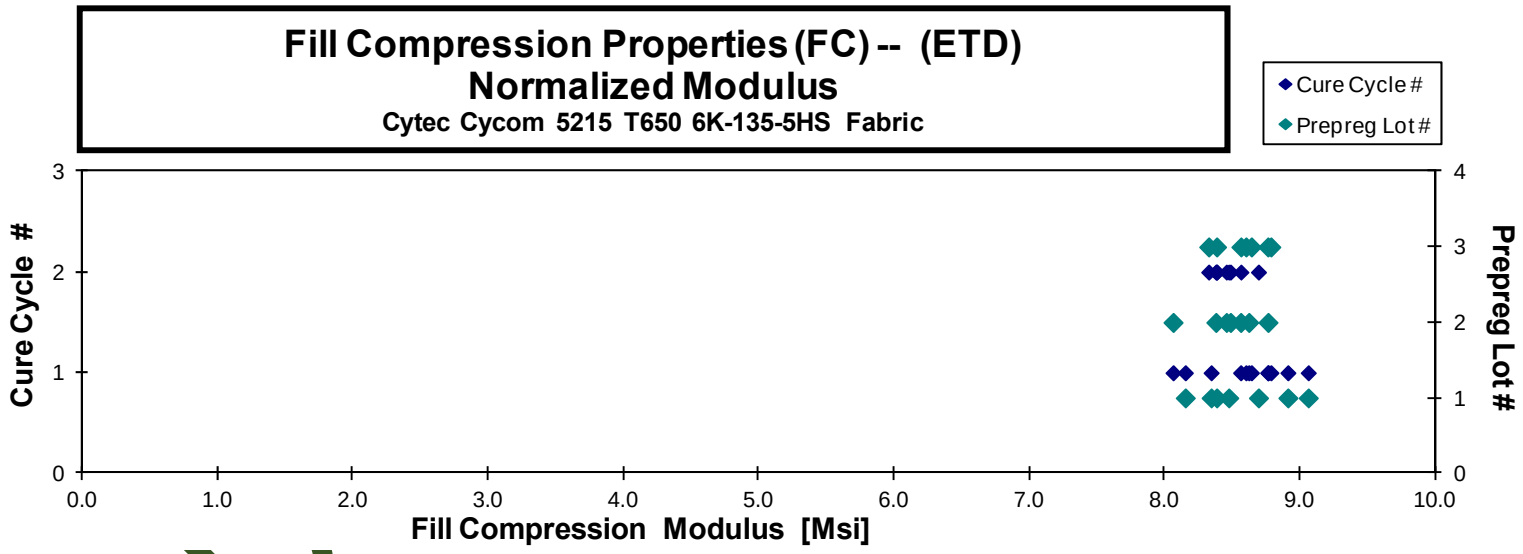
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Fill Compression Strength [ksi]


Fill Compression Properties (FC) -- (ETD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
9.0
10.0
Fill Compression Modulus [Msi]

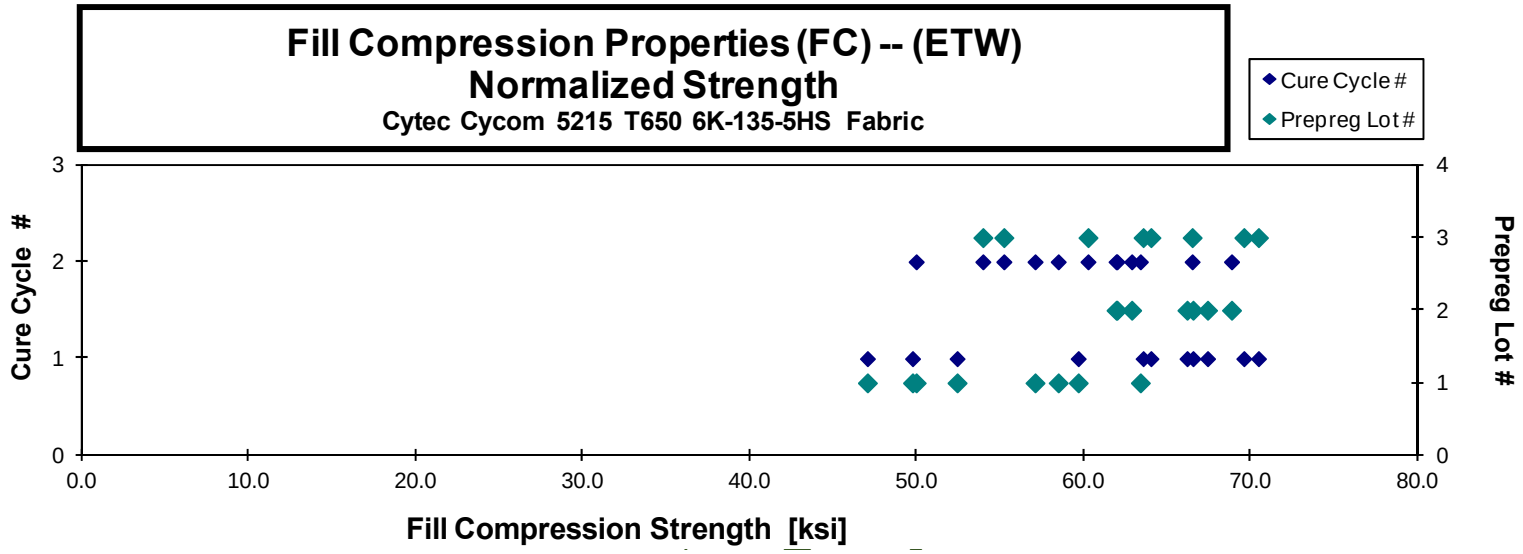
Fill Compression Properties (FC) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EZA11DM	A	C1	1	1		8.201	0.029	0.124	8	HGM	0.0155		8.192
C0EZA11EM	A	C1	1	1		8.114	0.049	0.125	8	BAT	0.0156		8.160
C0EZA11FM	A	C1	1	1		8.978	0.046	0.124	8	HIT	0.0155		9.002
C0EZA11GM	A	C1	1	1		8.733	0.046	0.125	8	BGM	0.0156		8.784
C0EZA11HM	A	C1	1	1	49.444			0.125	8	BGM	0.0156	49.750	
C0EZA11IM	A	C1	1	1	52.137			0.125	8	BGM	0.0156	52.417	
C0EZA11JM	A	C1	1	1	59.552			0.124	8	BGM	0.0155	59.672	
C0EZA11KM	A	C1	1	1	47.085			0.124	8	BGM	0.0155	47.047	
C0EZA21AM	A	C2	1	2		8.738	0.036	0.124	8	BGM	0.0154		8.708
C0EZA21BM	A	C2	1	2		8.315	0.061	0.123	8	BGM	0.0154		8.250
C0EZA21CM	A	C2	1	2		8.546		0.124	8	BGM	0.0156		8.574
C0EZA21DM	A	C2	1	2	49.299			0.126	8	BGM	0.0157	49.968	
C0EZA21EM	A	C2	1	2	56.940			0.124	8	BGM	0.0155	57.086	
C0EZA21FM	A	C2	1	2	57.660			0.126	8	BGM	0.0157	58.473	
C0EZA21GM	A	C2	1	2	62.282			0.126	8	BGM	0.0158	63.395	
C0EZB11DM	B	C1	2	1		8.367	0.034	0.123	8	BGM	0.0154		8.327
C0EZB11EM	B	C1	2	1		8.849	0.034	0.123	8	BGM	0.0154		8.777
C0EZB11FM	B	C1	2	1		8.452	0.033	0.124	8	BGM	0.0155		8.464
C0EZB11GM	B	C1	2	1	68.279			0.122	8	BGM	0.0153	67.416	
C0EZB11HM	B	C1	2	1	66.996			0.123	8	BGM	0.0154	66.546	
C0EZB11IM	B	C1	2	1	66.445			0.124	8	BGM	0.0154	66.186	
C0EZB21AM	B	C2	2	2		8.851	0.041	0.122	8	HIT / BGM	0.0152		8.707
C0EZB21BM	B	C2	2	2		8.537	0.043	0.123	8	BGM	0.0154		8.456
C0EZB21CM	B	C2	2	2		8.967	0.028	0.123	8	BGM / HAT	0.0154		8.910
C0EZB21DM	B	C2	2	2		8.608	0.028	0.123	8	BGM	0.0154		8.555
C0EZB21EM	B	C2	2	2	69.019			0.124	8	BGM	0.0155	68.852	
C0EZB21FM	B	C2	2	2	61.874			0.124	8	BGM	0.0155	61.940	
C0EZB21GM	B	C2	2	2	62.855			0.124	8	BGM	0.0155	62.872	
C0EZB21HM	B	C2	2	2	61.994			0.124	8	BGM	0.0155	61.994	
C0EZC11DM	C	C1	3	1		8.315	0.050	0.122	8	BAB / HIB	0.0153		8.204
C0EZC11EM	C	C1	3	1		9.090	0.045	0.122	8	HGM / HIT	0.0153		8.977
C0EZC11FM	C	C1	3	1		8.278	0.040	0.123	8	HGM	0.0154		8.228
C0EZC11GM	C	C1	3	1	65.904			0.120	8	BGM	0.0151	64.027	
C0EZC11HM	C	C1	3	1	63.878			0.123	8	BGM	0.0154	63.560	
C0EZC11IM	C	C1	3	1	70.334			0.124	8	BGM	0.0155	70.466	
C0EZC11JM	C	C1	3	1	69.865			0.124	8	BGM / HIT	0.0154	69.592	
C0EZC21AM	C	C2	3	2		8.751	0.046	0.121	8	HGM	0.0151		8.522
C0EZC21BM	C	C2	3	2		8.956	0.069	0.120	8	HGM	0.0150		8.691
C0EZC21CM	C	C2	3	2		8.516	0.037	0.121	8	BGM	0.0152		8.338
C0EZC21DM	C	C2	3	2		9.064	0.037	0.123	8	BGM	0.0153		8.973
C0EZC21EM	C	C2	3	2	56.277			0.122	8	BAT	0.0152	55.218	
C0EZC21FM	C	C2	3	2	67.271			0.123	8	BGM	0.0153	66.493	
C0EZC21GM	C	C2	3	2	61.387			0.122	8	BGM	0.0152	60.257	
C0EZC21HM	C	C2	3	2	54.898			0.122	8	BGM	0.0152	53.961	

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	60.942	8.630	0.042
Standard Dev.	6.938	0.298	0.011
Coeff. of Var. [%]	11.385	3.454	25.430
Min.	47.085	8.114	0.028
Max.	70.334	9.090	0.069
Number of Spec.	23	21	20

	Avg. t_{ply} [in]	Strength$_{norm}$ [ksi]	Modulus$_{norm}$ [Msi]
Average$_{norm}$	0.0154	60.747	8.562
Standard Dev.$_{norm}$		6.752	0.281
Coeff. of Var. [%]$_{norm}$		11.115	3.277
Min.	0.0150	47.047	8.160
Max.	0.0158	70.466	9.002
Number of Spec.		23	21


Fill Compression Properties (FC) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
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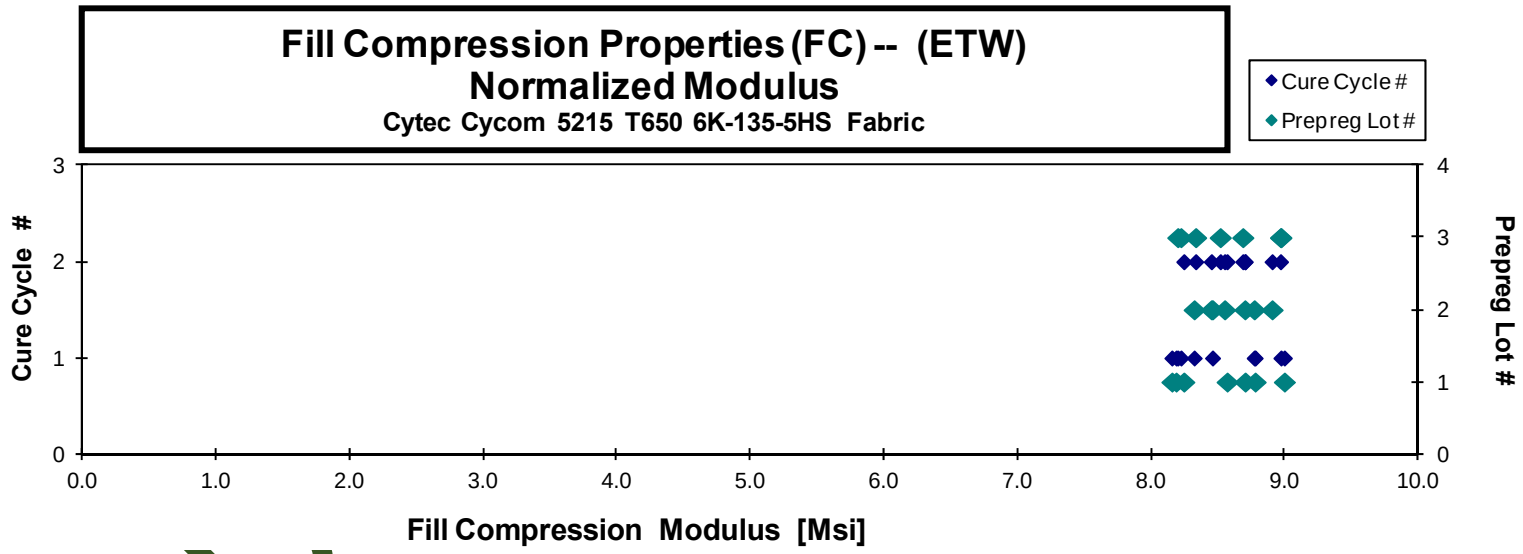
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
Fill Compression Strength [ksi]


Fill Compression Properties (FC) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
9.0
10.0
Fill Compression Modulus [Msi]

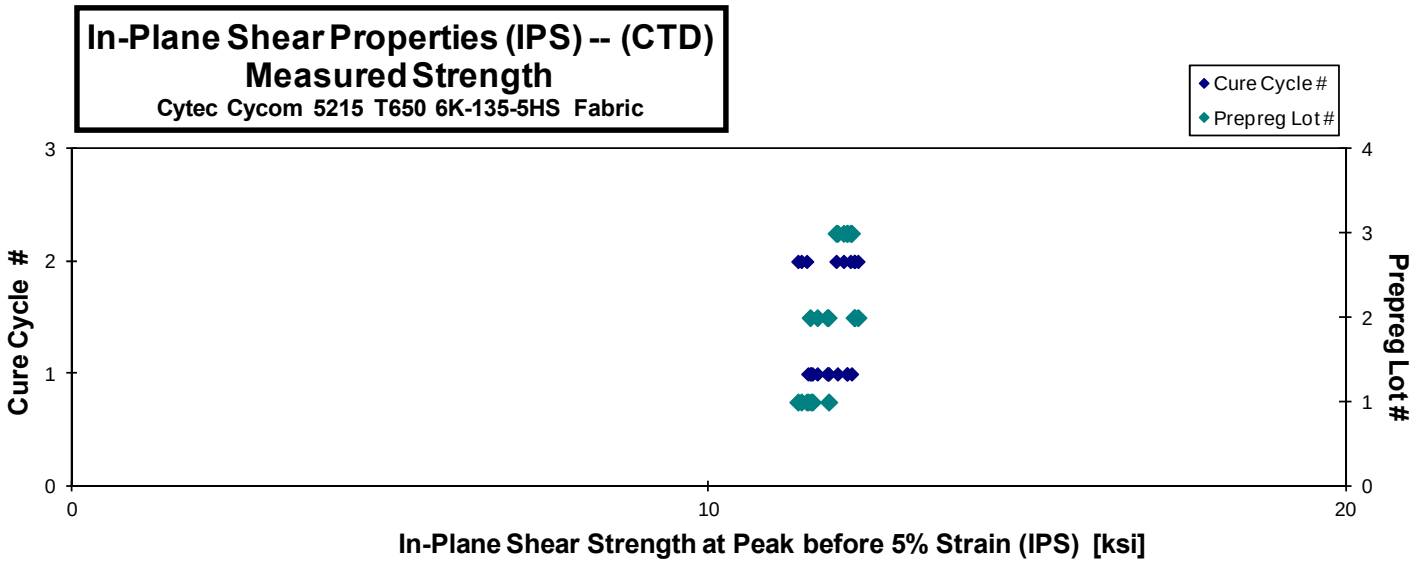
4.5 In-Plane Shear Properties (IPS)

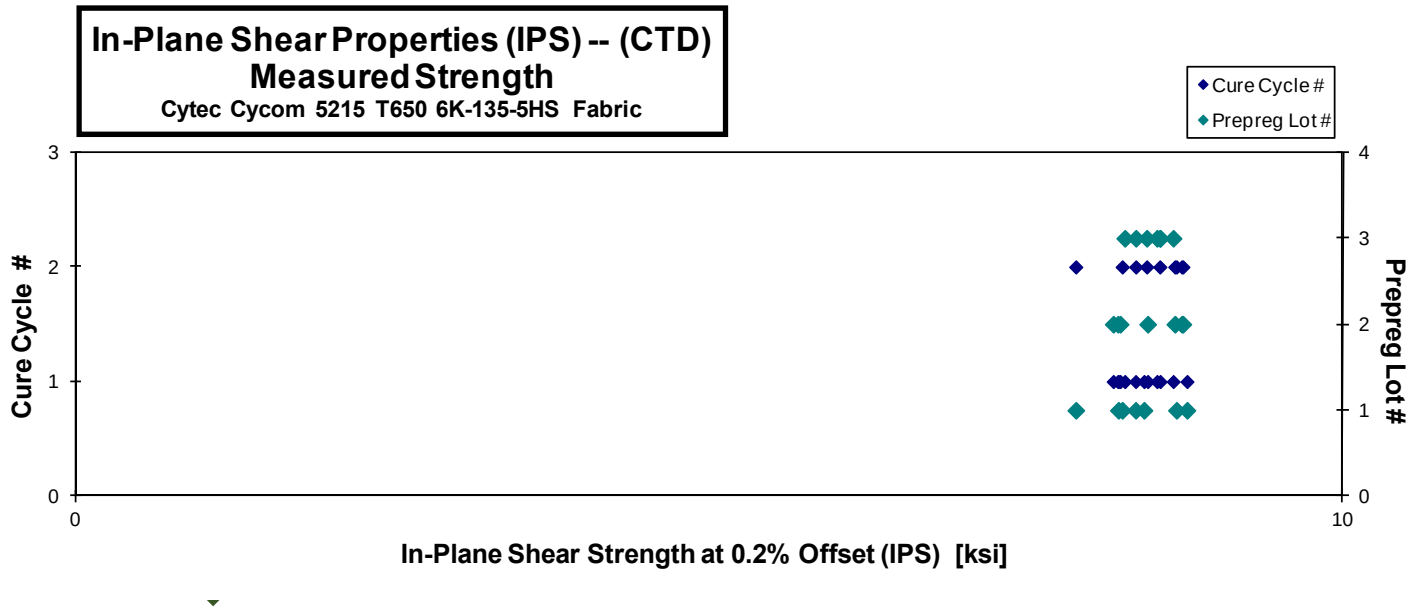
In-Plane Shear Properties (IPS) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

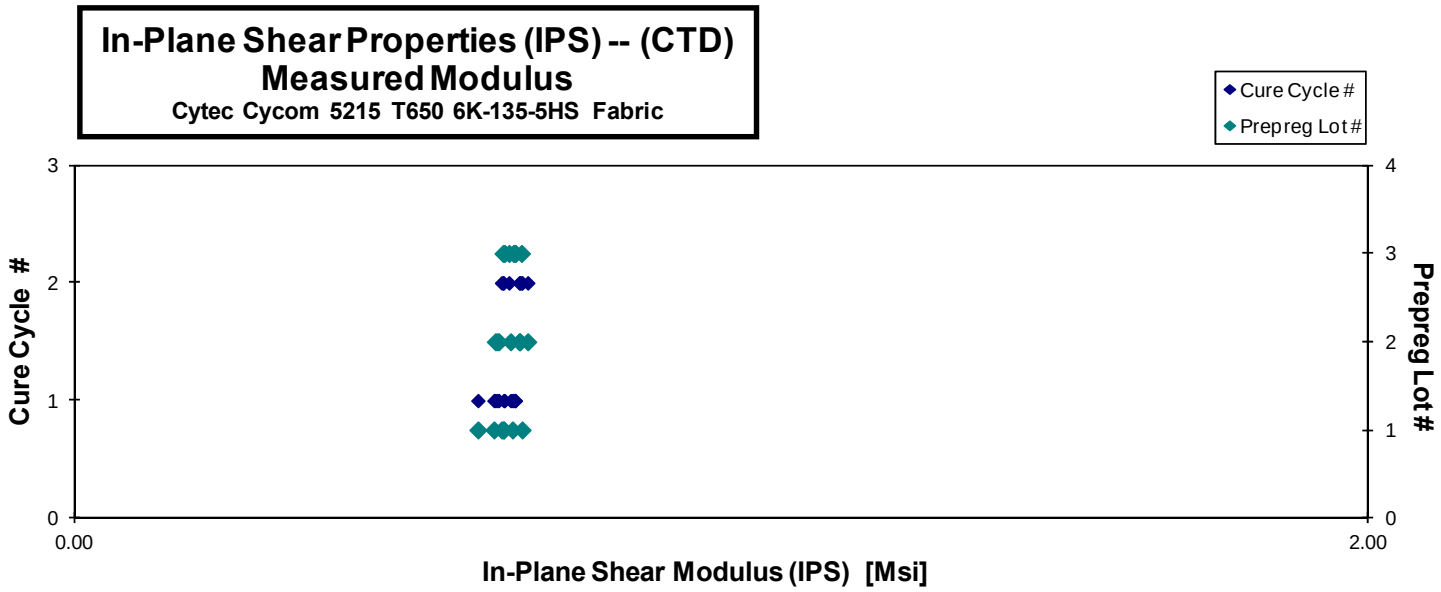
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Peak Strength before 5% Strain [ksi]	Strength at 5% Strain [ksi]*	0.2% Offset Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]
C0ENA116B	A	C1	1	1	11.548		8.768	0.623	0.125	8	0.0156
C0ENA117B	A	C1	1	1	11.593		8.227	0.648	0.125	8	0.0157
C0ENA118B	A	C1	1	1	11.617		8.363	0.663	0.124	8	0.0155
C0ENA119B	A	C1	1	1	11.873		8.429	0.677	0.121	8	0.0151
C0ENA215B	A	C2	1	2	11.444		8.257	0.660	0.127	8	0.0158
C0ENA216B	A	C2	1	2	11.391		7.891	0.692	0.127	8	0.0158
C0ENA217B	A	C2	1	2	11.528		8.685	0.663	0.123	8	0.0154
C0ENB115B	B	C1	2	1	11.583	11.465	8.187	0.656	0.126	8	0.0157
C0ENB116B	B	C1	2	1	11.694		8.241	0.650	0.126	8	0.0158
C0ENB117B	B	C1	2	1	11.866		8.458	0.674	0.123	8	0.0154
C0ENB118B	B	C1	2	1	11.850		8.223	0.653	0.126	8	0.0158
C0ENB215B	B	C2	2	2	12.273		8.673	0.700	0.122	8	0.0152
C0ENB216B	B	C2	2	2	12.282		8.726	0.687	0.121	8	0.0152
C0ENB217B	B	C2	2	2	12.333		8.736	0.688	0.121	8	0.0151
C0ENC115B	C	C1	3	1	12.156		8.531	0.678	0.124	8	0.0155
C0ENC116B	C	C1	3	1	12.013		8.277	0.665	0.126	8	0.0157
C0ENC117B	C	C1	3	1	12.232		8.659	0.681	0.122	8	0.0153
C0ENC118B	C	C1	3	1	12.165		8.556	0.681	0.124	8	0.0156
C0ENC215B	C	C2	3	2	11.991		8.451	0.671	0.126	8	0.0158
C0ENC216B	C	C2	3	2	12.106		8.364	0.662	0.126	8	0.0158
C0ENC217B	C	C2	3	2	12.214		8.554	0.691	0.123	8	0.0154

*** All Specimens failed before 5% Strain**

Average	**11.893**	**11.465**	**8.441**	**0.670**	**Average**	**0.0155**
Standard Dev.	**0.311**		**0.229**	**0.018**	**Standard Dev.**	
Coeff. of Var. [%]	**2.613**		**2.708**	**2.721**	**Coeff. of Var. [%]**	
Min.	**11.391**		**7.891**	**0.623**	**Min.**	**0.0151**
Max.	**12.333**		**8.768**	**0.700**	**Max.**	**0.0158**
Number of Spec.	**21**	**1**	**21**	**21**	**Number of Spec.**	**21**


In-Plane Shear Properties (IPS) -- (CTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
20
In-Plane Shear Strength at Peak before 5% Strain (IPS) [ksi]


In-Plane Shear Properties (IPS) -- (CTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]

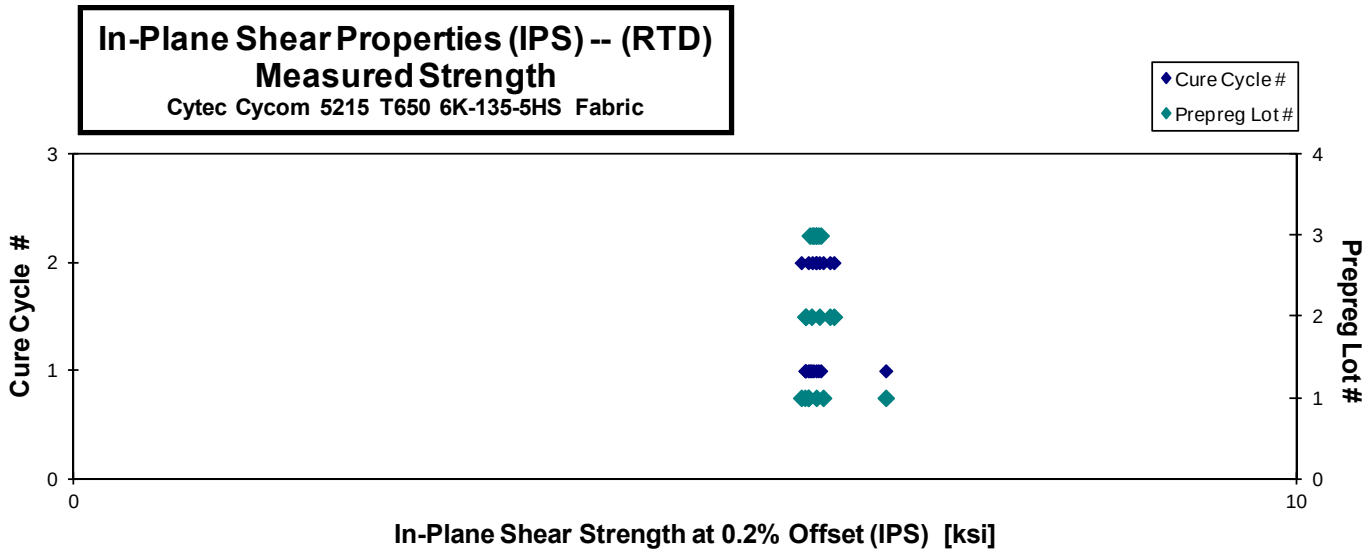

In-Plane Shear Properties (IPS) -- (CTD)
Measured Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.00
2.00
In-Plane Shear Modulus (IPS) [Msi]

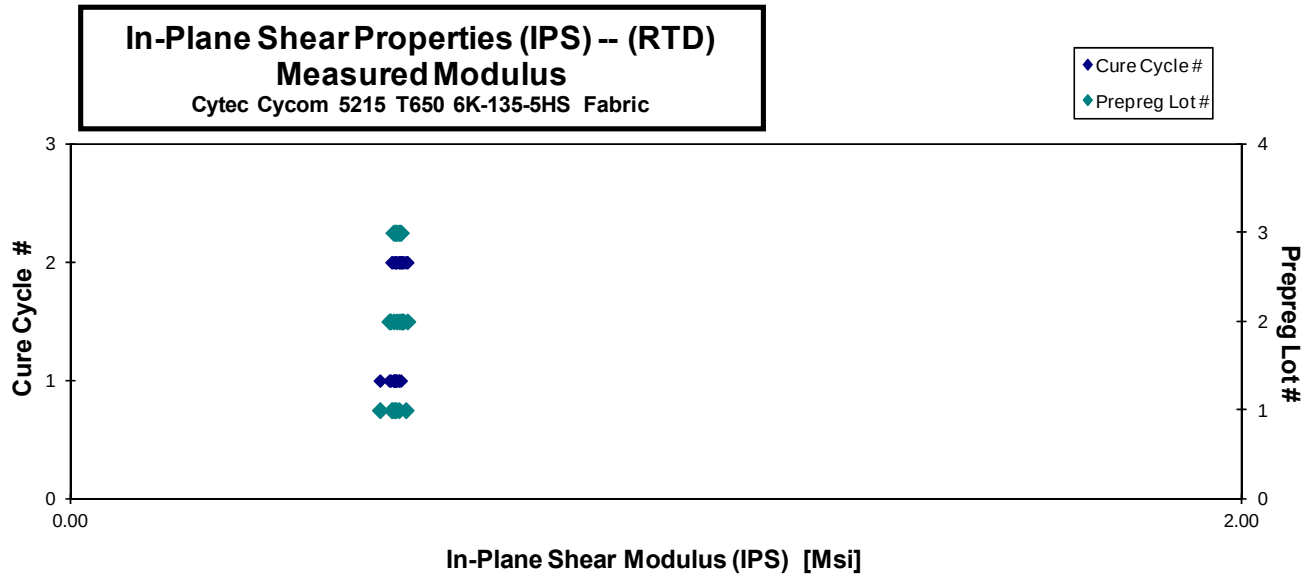
In-Plane Shear Properties (IPS) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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]
C0ENA111A	A	C1	1	1	6.644	0.528	0.122	8	0.0153
C0ENA112A	A	C1	1	1	6.011	0.554	0.125	8	0.0156
C0ENA113A	A	C1	1	1	5.983	0.551	0.125	8	0.0157
C0ENA114A	A	C1	1	1	6.076	0.561	0.124	8	0.0155
C0ENA211A	A	C2	1	2	6.132	0.572	0.121	8	0.0152
C0ENA212A	A	C2	1	2	5.953	0.548	0.126	8	0.0158
C0ENA213A	A	C2	1	2	6.011	0.555	0.125	8	0.0156
C0ENB111A*	B	C1	2	1		0.557	0.123	8	0.0153
C0ENB112A	B	C1	2	1	5.987	0.546	0.125	8	0.0156
C0ENB113A	B	C1	2	1	5.989	0.544	0.125	8	0.0156
C0ENB114A	B	C1	2	1	6.037	0.552	0.124	8	0.0155
C0ENB211A	B	C2	2	2	6.220	0.575	0.120	8	0.0150
C0ENB212A*	B	C2	2	2		0.566	0.122	8	0.0153
C0ENB213A*	B	C2	2	2		0.568	0.122	8	0.0152
C0ENB214A	B	C2	2	2	6.102	0.561	0.123	8	0.0153
C0ENB218B	B	C2	2	2	6.188	0.565	0.122	8	0.0153
C0ENC111A	C	C1	3	1	6.023	0.556	0.125	8	0.0156
C0ENC112A	C	C1	3	1	6.112	0.564	0.124	8	0.0155
C0ENC113A	C	C1	3	1	6.094	0.560	0.124	8	0.0155
C0ENC114A	C	C1	3	1	6.053	0.554	0.126	8	0.0157
C0ENC211A*	C	C2	3	2		0.563	0.124	8	0.0155
C0ENC212A	C	C2	3	2	6.043	0.556	0.126	8	0.0157
C0ENC213A*	C	C2	3	2		0.554	0.126	8	0.0158
C0ENC214A	C	C2	3	2	6.074	0.551	0.127	8	0.0159
C0ENC218B	C	C2	3	2	6.075	0.560	0.125	8	0.0156

***0.2% offset data not reported because extensometer was removed before 0.2% offset**
C0ENB218B and C0ENC218B was taken from CTD batch and tested as extra RTD specimen.

Average	**6.090**	**0.557**	**Average**	**0.0155**
Standard Dev.	**0.147**	**0.010**	**Standard Dev.**	
Coeff. of Var. [%]	**2.416**	**1.753**	**Coeff. of Var. [%]**	
Min.	**5.953**	**0.528**	**Min.**	**0.0150**
Max.	**6.644**	**0.575**	**Max.**	**0.0159**
Number of Spec.	**20**	**25**	**Number of Spec.**	**25**


In-Plane Shear Properties (IPS) -- (RTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]

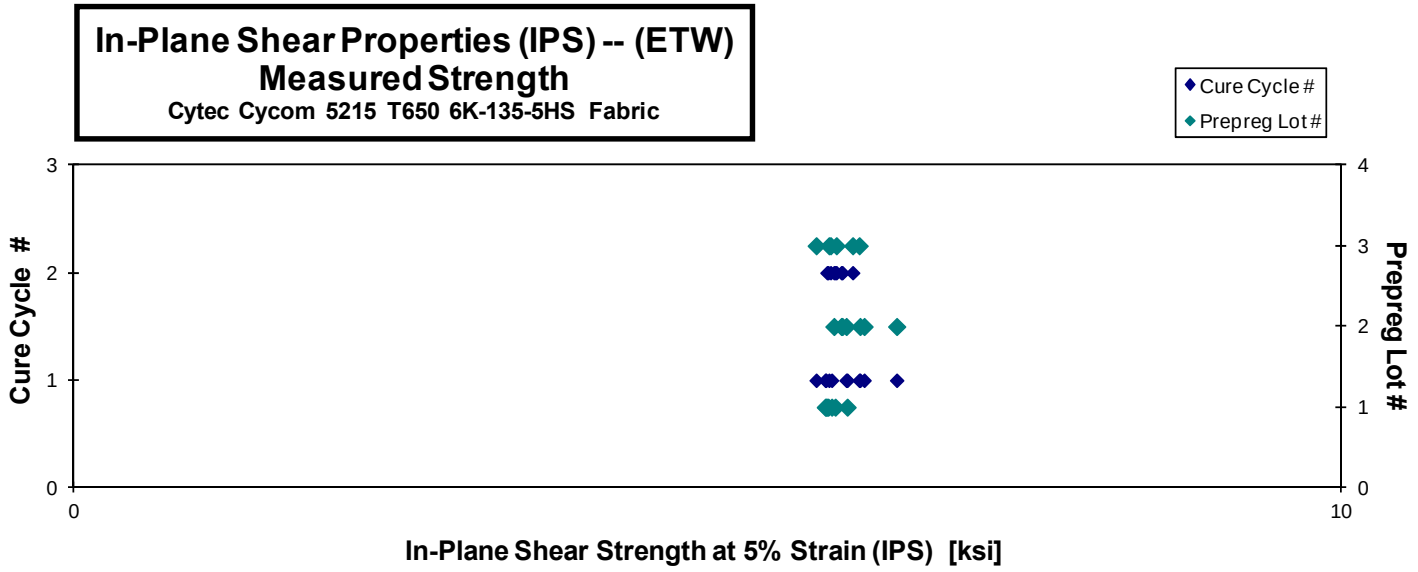

In-Plane Shear Properties (IPS) -- (RTD)
Measured Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.00
2.00
In-Plane Shear Modulus (IPS) [Msi]

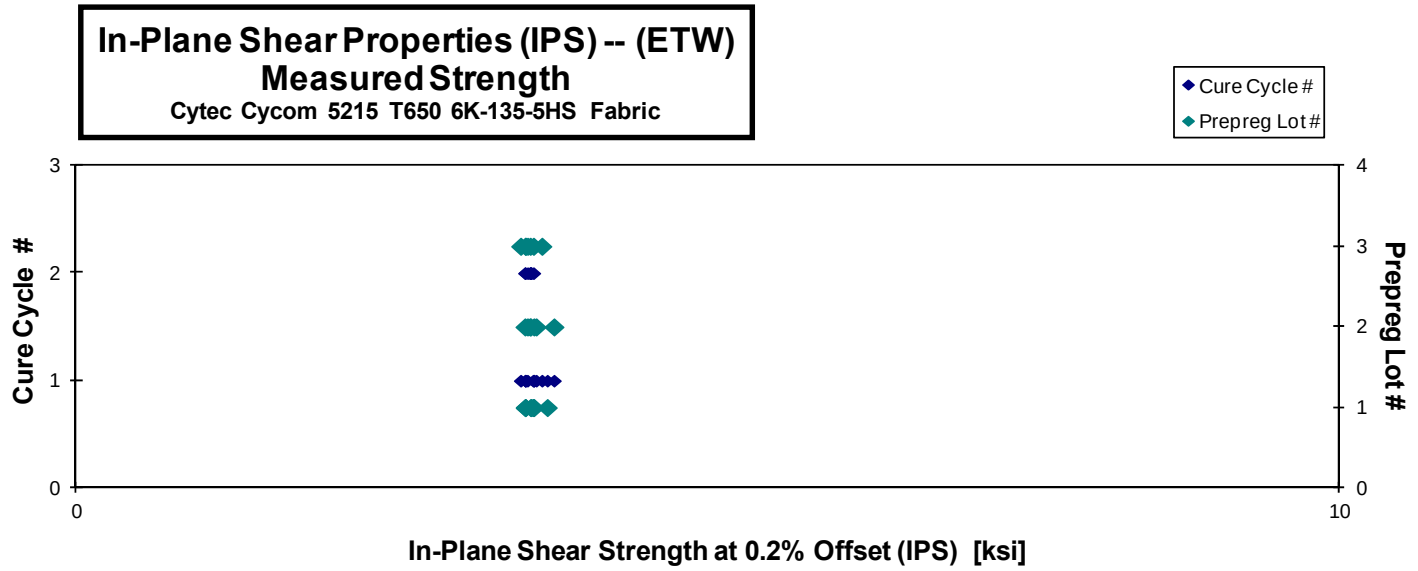
In-Plane Shear Properties (IPS) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

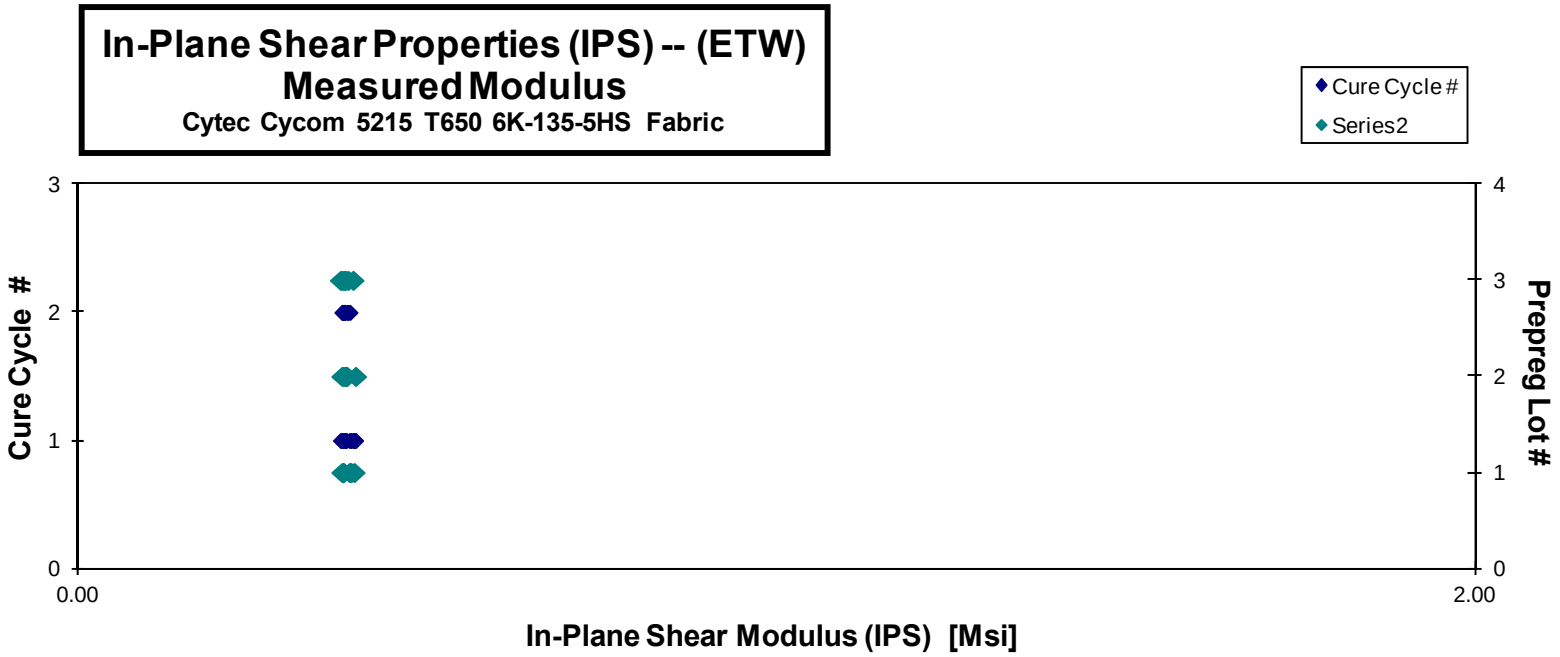
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength at 5% Strain [ksi]	0.2% Offset Strength [ksi]	Modulus [Msi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]
C0ENA11BM	A	C1	1	1	5.932	3.621	0.391	0.126	8	0.0157
C0ENA11CM	A	C1	1	1	5.936	3.559	0.380	0.125	8	0.0156
C0ENA11DM	A	C1	1	1	5.981	3.734	0.396	0.125	8	0.0156
C0ENA11EM	A	C1	1	1	6.104	3.627	0.389	0.124	8	0.0155
C0ENA219M	A	C2	1	2	6.010	3.601	0.380	0.125	8	0.0157
C0ENA21AM	A	C2	1	2	5.954	3.559	0.378	0.126	8	0.0158
C0ENA21BM	A	C2	1	2	5.945	3.607	0.390	0.125	8	0.0156
C0ENB119M	B	C1	2	1	6.206	3.628	0.382	0.125	8	0.0156
C0ENB11AM	B	C1	2	1	6.495	3.787	0.398	0.126	8	0.0158
C0ENB11BM	B	C1	2	1	6.238	3.646	0.384	0.125	8	0.0157
C0ENB11CM	B	C1	2	1	6.096	3.577	0.378	0.125	8	0.0157
C0ENB219M	B	C2	2	2	5.999	3.596	0.385	0.123	8	0.0153
C0ENB21AM	B	C2	2	2	6.058	3.557	0.380	0.124	8	0.0155
C0ENB21BM	B	C2	2	2	6.065	3.602	0.383	0.123	8	0.0154
C0ENC119M	C	C1	3	1	5.960	3.561	0.382	0.125	8	0.0156
C0ENC11AM	C	C1	3	1	5.860	3.523	0.376	0.125	8	0.0156
C0ENC11BM	C	C1	3	1	6.199	3.691	0.394	0.124	8	0.0155
C0ENC11CM	C	C1	3	1		3.560	0.383	0.125	8	0.0157
C0ENC219M	C	C2	3	2	6.019	3.599	0.379	0.126	8	0.0158
C0ENC21AM	C	C2	3	2	5.973	3.578	0.381	0.127	8	0.0159
C0ENC21BM	C	C2	3	2	6.147	3.624	0.387	0.126	8	0.0157

For C0ENC11CM, STRAIN GAGE FAILED BEFORE REACHING 5% SHEAR STRAIN.

Average	**6.059**	**3.611**	**0.385**	**Average**	**0.0156**
Standard Dev.	**0.145**	**0.063**	**0.006**	**Standard Dev.**	
Coeff. of Var. [%]	**2.395**	**1.734**	**1.604**	**Coeff. of Var. [%]**	
Min.	**5.860**	**3.523**	**0.376**	**Min.**	**0.0153**
Max.	**6.495**	**3.787**	**0.398**	**Max.**	**0.0159**
Number of Spec.	**20**	**21**	**21**	**Number of Spec.**	**21**


In-Plane Shear Properties (IPS) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
In-Plane Shear Strength at 5% Strain (IPS) [ksi]


In-Plane Shear Properties (IPS) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0
10
In-Plane Shear Strength at 0.2% Offset (IPS) [ksi]


In-Plane Shear Properties (IPS) -- (ETW)
Measured Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Series2
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.00
2.00
In-Plane Shear Modulus (IPS) [Msi]

4.6 "25/50/25" Unnotched Tension 1 Properties (UNT1)

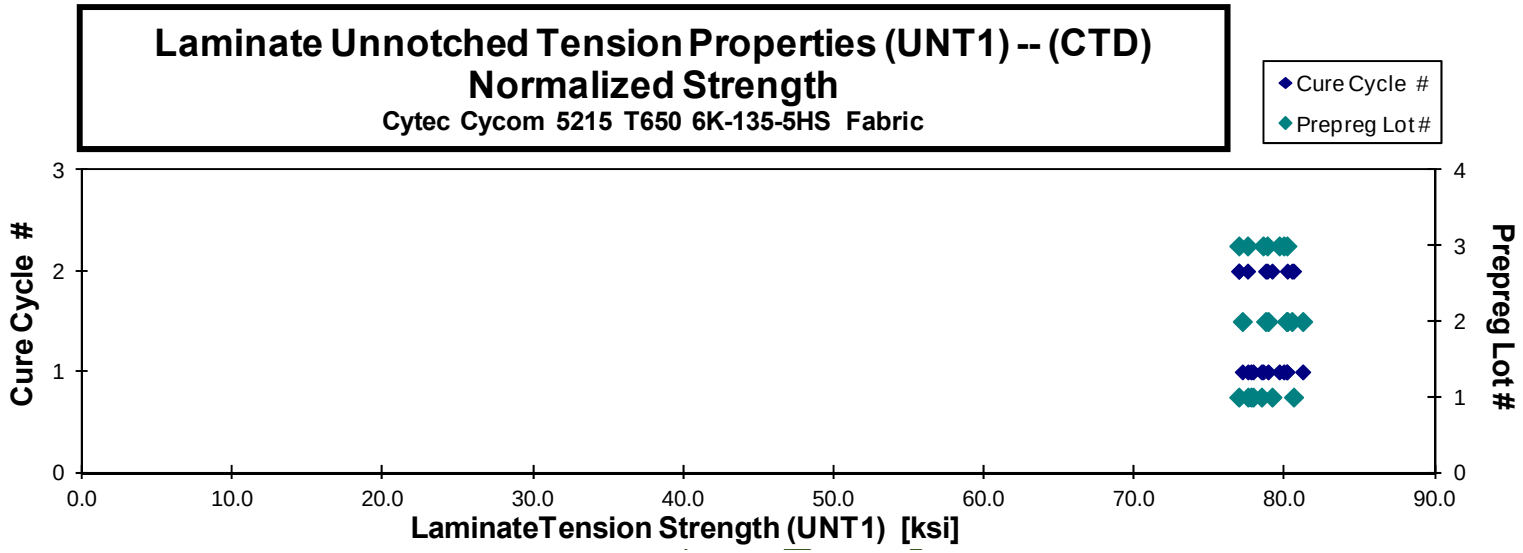
Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

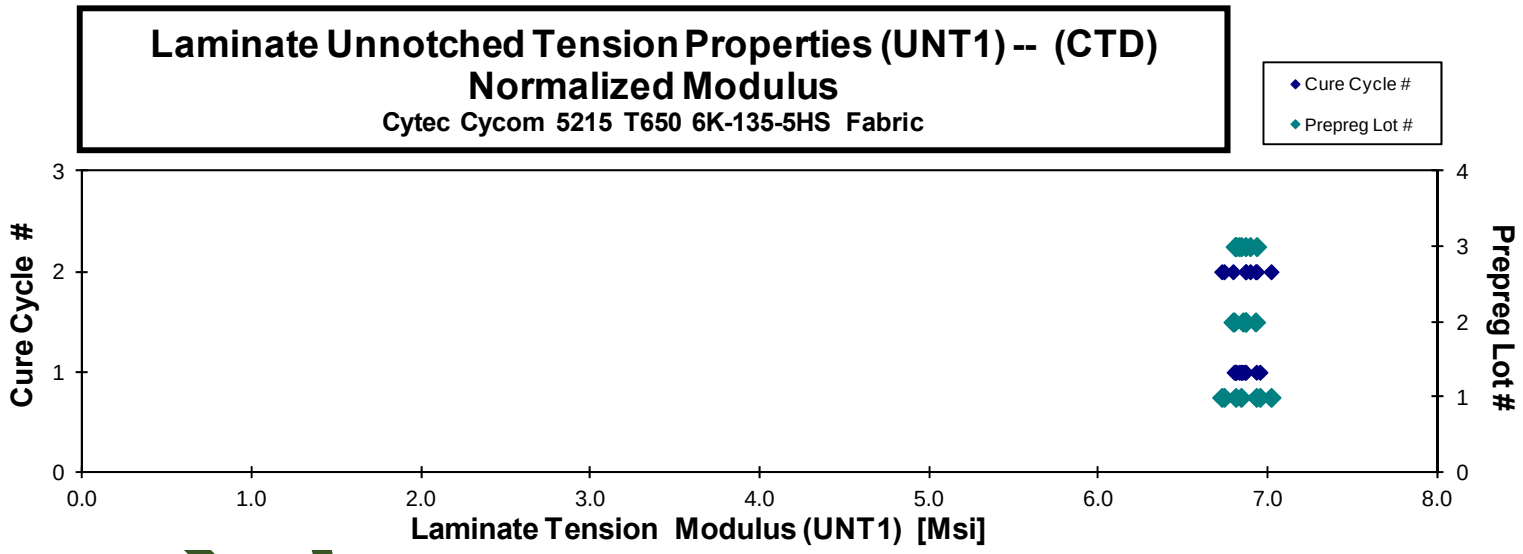
normalizing t_{ply} [in]: 0.0155

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]
C0EAA116B	A	C1	1	1	77.043	6.765	0.125	8	LGM	0.0157	77.882	6.839
C0EAA117B	A	C1	1	1	77.967	6.827	0.124	8	LGM	0.0155	77.747	6.807
C0EAA118B	A	C1	1	1	78.853	6.986	0.123	8	LWT / LWB	0.0154	78.450	6.950
C0EAA119B	A	C1	1	1	78.576	7.022	0.122	8	LWB	0.0153	77.541	6.929
C0EAA215B	A	C2	1	2	80.289	6.991	0.124	8	LWT / LWB	0.0156	80.580	7.016
C0EAA216B	A	C2	1	2	78.775	6.707	0.125	8	LGM	0.0156	79.145	6.739
C0EAA217B	A	C2	1	2	77.409	6.767	0.123	8	LWT	0.0154	76.931	6.725
C0EAB115B	B	C1	2	1	81.331	6.862	0.124	8	LWB / LWT	0.0155	81.189	6.850
C0EAB116B	B	C1	2	1	80.404	6.823	0.124	8	LGM	0.0154	80.112	6.799
C0EAB117B	B	C1	2	1	80.815	7.030	0.121	8	LWT	0.0151	78.882	6.862
C0EAB118B	B	C1	2	1	78.087	6.947	0.123	8	LGM	0.0153	77.174	6.866
C0EAB215B	B	C2	2	2	79.628	6.746	0.125	8	LGM	0.0156	80.163	6.792
C0EAB216B	B	C2	2	2	78.658	6.862	0.124	8	LGM	0.0155	78.721	6.867
C0EAB217B	B	C2	2	2	81.986	7.056	0.122	8	LWT / LWB	0.0152	80.466	6.925
C0EAC115B	C	C1	3	1	80.718	6.877	0.123	8	LWT	0.0153	79.926	6.809
C0EAC116B	C	C1	3	1	81.087	6.885	0.123	8	LWB	0.0153	80.138	6.804
C0EAC117B	C	C1	3	1	79.284	6.892	0.123	8	LGM	0.0154	78.548	6.828
C0EAC118B	C	C1	3	1	79.768	6.852	0.124	8	LWB	0.0155	79.629	6.840
C0EAC215B	C	C2	3	2	76.090	6.789	0.125	8	LWT	0.0157	76.939	6.865
C0EAC216B	C	C2	3	2	76.816	6.869	0.125	8	LGM	0.0156	77.518	6.932
C0EAC217B	C	C2	3	2	80.004	6.995	0.122	8	LGM	0.0153	78.832	6.893

Average	79.218	6.883	
Standard Dev.	1.605	0.101	
Coeff. of Var. [%]	2.026	1.468	
Min.	76.090	6.707	
Max.	81.986	7.056	
Number of Spec.	21	21	

$Average_{norm}$	0.0154	78.882	6.854
$Standard\ Dev._{norm}$		1.303	0.070
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.651	1.026
Min.	0.0151	76.931	6.725
Max.	0.0157	81.189	7.016
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
LaminateTension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Modulus (UNT1) [Msi]

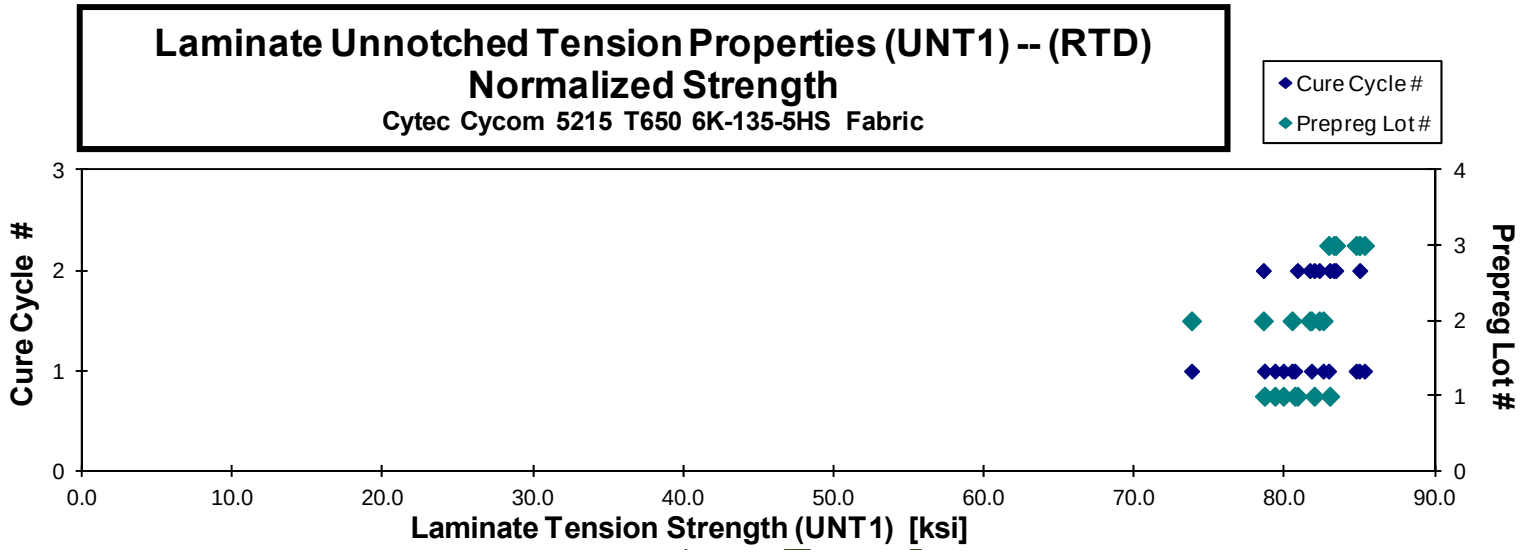
Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

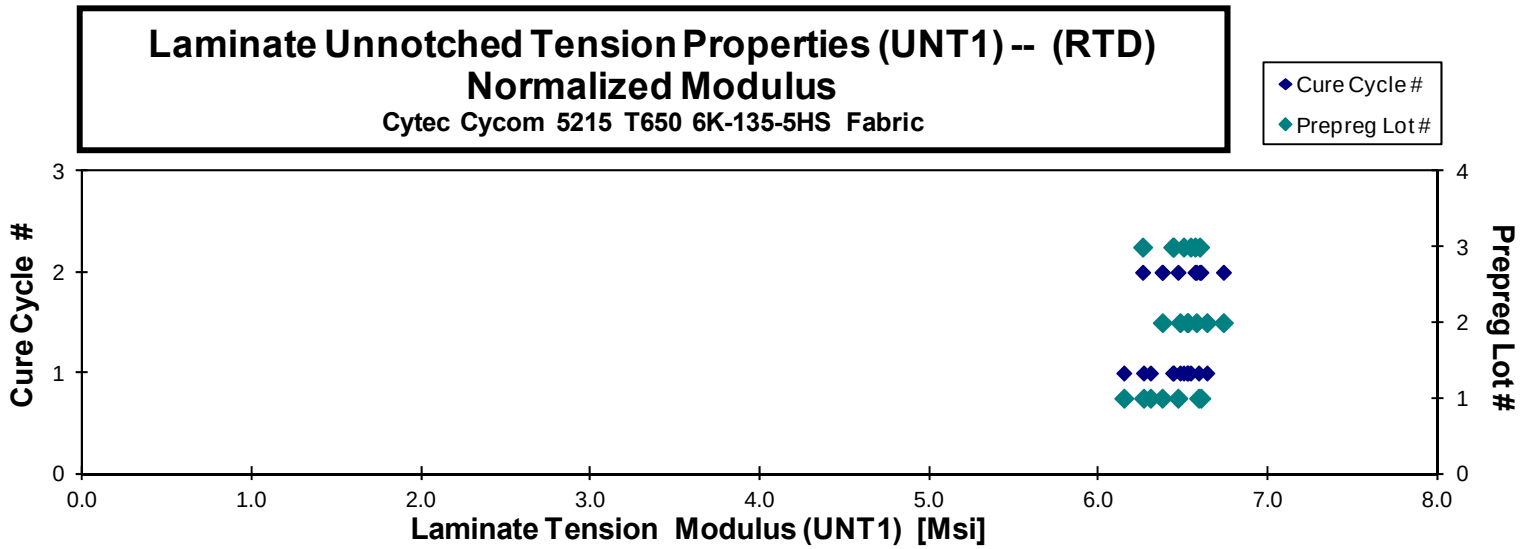
normalizing t_{ply} [in]: 0.0155

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]
C0EAA111A	A	C1	1	1	81.063	6.792	0.120	8	DWB / LWT	0.0150	78.644	6.589
C0EAA112A	A	C1	1	1	80.696	6.266	0.124	8	LWB	0.0155	80.664	6.264
C0EAA113A	A	C1	1	1	79.130	6.131	0.124	8	LWT	0.0155	79.342	6.147
C0EAA114A	A	C1	1	1	80.007	6.313	0.124	8	LGM	0.0155	79.900	6.305
C0EAA211A	A	C2	1	2	82.145	6.617	0.124	8	LGM	0.0155	81.957	6.602
C0EAA212A	A	C2	1	2	80.329	6.334	0.125	8	LGM	0.0156	80.836	6.374
C0EAA213A	A	C2	1	2	82.593	6.436	0.125	8	LGM	0.0156	82.993	6.467
C0EAB111A	B	C1	2	1	76.563	6.766	0.120	8	LGM	0.0149	73.795	6.521
C0EAB112A	B	C1	2	1	81.354	6.596	0.123	8	LGM	0.0153	80.479	6.525
C0EAB113A	B	C1	2	1	83.065	6.519	0.123	8	LGM	0.0154	82.552	6.479
C0EAB114A	B	C1	2	1	82.303	6.681	0.123	8	LGM	0.0154	81.772	6.637
C0EAB211A	B	C2	2	2	83.938	6.502	0.122	8	LGM	0.0152	82.291	6.375
C0EAB212A	B	C2	2	2	81.243	6.542	0.125	8	LGM	0.0156	81.658	6.575
C0EAB213A	B	C2	2	2	78.995	6.772	0.123	8	LWT	0.0154	78.570	6.735
C0EAC111A	C	C1	3	1	84.366	6.554	0.122	8	LGM	0.0152	82.915	6.441
C0EAC112A	C	C1	3	1	86.150	6.499	0.123	8	LWB / LWT	0.0153	85.305	6.436
C0EAC113A	C	C1	3	1	85.283	6.567	0.124	8	LWB / LWT	0.0154	84.950	6.541
C0EAC114A	C	C1	3	1	84.713	6.497	0.124	8	LWB / LWT	0.0155	84.747	6.500
C0EAC211A	C	C2	3	2	83.903	6.608	0.123	8	LWB / LWT	0.0154	83.384	6.568
C0EAC212A	C	C2	3	2	84.656	6.569	0.124	8	LGM	0.0156	84.985	6.595
C0EAC213A	C	C2	3	2	82.821	6.226	0.125	8	LWB / LWT	0.0156	83.255	6.258

Average	82.158	6.514	
Standard Dev.	2.391	0.179	
Coeff. of Var. [%]	2.910	2.746	
Min.	76.563	6.131	
Max.	86.150	6.792	
Number of Spec.	21	21	

$Average_{norm}$	0.0154	81.666	6.473
$Standard\ Dev._{norm}$		2.710	0.144
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.319	2.230
Min.	0.0149	73.795	6.147
Max.	0.0156	85.305	6.735
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Modulus (UNT1) [Msi]

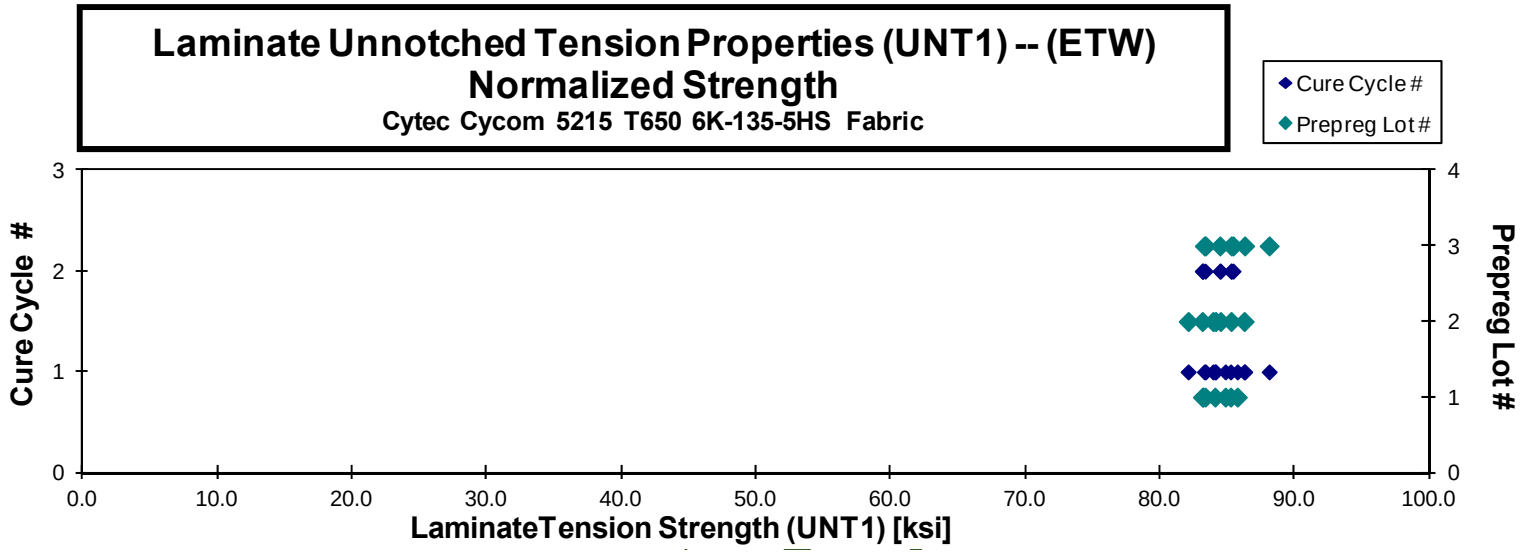
Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

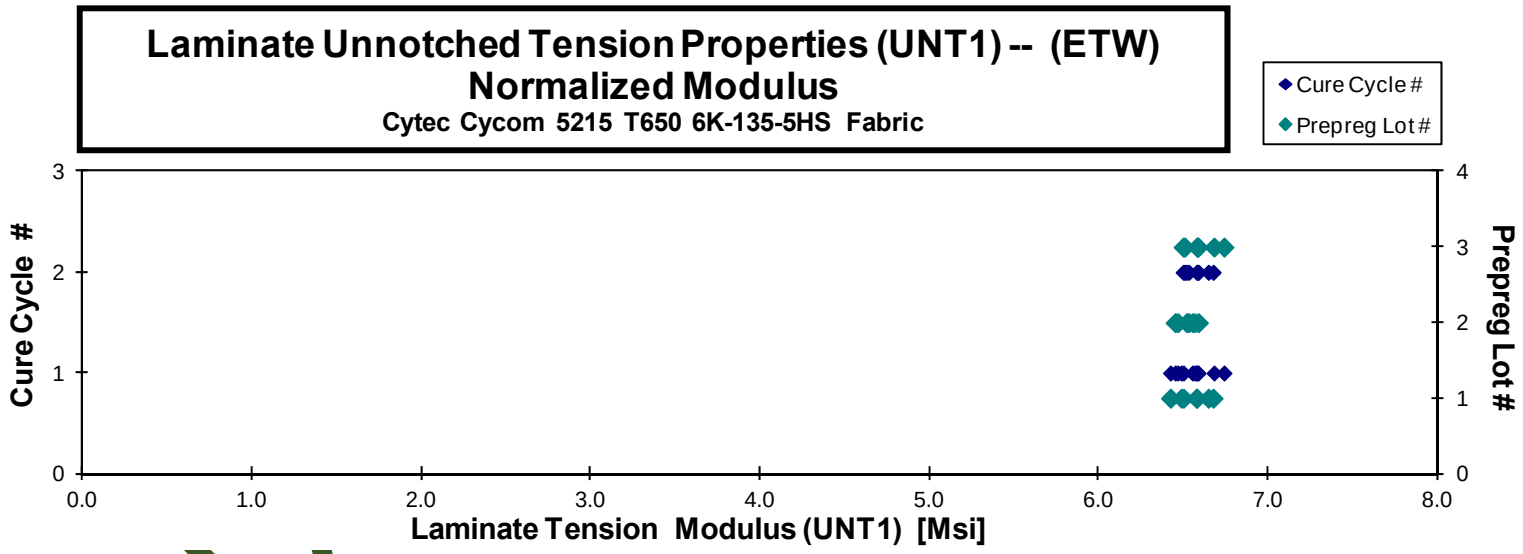
normalizing t_{ply} [in]: 0.0155

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]
C0EAA11BM	A	C1	1	1	84.547	6.399	0.124	8	XGM	0.0156	84.865	6.423
C0EAA11CM	A	C1	1	1	85.826	6.543	0.123	8	XGM/LWB	0.0154	85.249	6.499
C0EAA11DM	A	C1	1	1	83.223	6.508	0.125	8	XGM	0.0157	84.084	6.575
C0EAA11EM	A	C1	1	1	85.890	6.497	0.124	8	XGM	0.0155	85.751	6.487
C0EAA219M	A	C2	1	2	83.099	6.571	0.124	8	LGM/XWT	0.0155	83.188	6.578
C0EAA21AM	A	C2	1	2	82.829	6.619	0.125	8	LWT/XWB	0.0156	83.174	6.647
C0EAA21BM	A	C2	1	2	82.945	6.641	0.125	8	XGM	0.0156	83.369	6.675
C0EAB119M	B	C1	2	1	84.097	6.462	0.124	8	XGM	0.0155	83.950	6.450
C0EAB11AM	B	C1	2	1	86.473	6.569	0.124	8	XGM	0.0155	86.264	6.553
C0EAB11BM	B	C1	2	1	82.150	6.570	0.124	8	XGM	0.0155	82.106	6.566
C0EAB11CM	B	C1	2	1	84.306	6.479	0.124	8	XGM	0.0155	84.137	6.466
C0EAB219M	B	C2	2	2	82.954	6.502	0.124	8	XGM	0.0155	83.154	6.518
C0EAB21AM	B	C2	2	2	84.544	6.591	0.124	8	XGM	0.0155	84.499	6.588
C0EAB21BM	B	C2	2	2	85.172	6.522	0.124	8	LWT / XWB	0.0155	85.286	6.531
C0EAC119M	C	C1	3	1	86.146	6.575	0.124	8	XGM	0.0155	86.297	6.586
C0EAC11AM	C	C1	3	1	87.660	6.645	0.125	8	XGM	0.0156	88.119	6.680
C0EAC11BM	C	C1	3	1	83.048	6.554	0.125	8	XGM	0.0156	83.394	6.581
C0EAC11CM	C	C1	3	1	83.161	6.727	0.124	8	XGM / LWB	0.0155	83.307	6.739
C0EAC219M	C	C2	3	2	85.381	6.504	0.124	8	XGM	0.0155	85.301	6.498
C0EAC21AM	C	C2	3	2	84.404	6.574	0.124	8	XGM	0.0155	84.461	6.579
C0EAC21BM	C	C2	3	2	85.028	6.475	0.125	8	LWT / XWB	0.0156	85.439	6.507

Average	**84.423**	**6.549**	
Standard Dev.	**1.458**	**0.074**	
Coeff. of Var. [%]	**1.727**	**1.126**	
Min.	**82.150**	**6.399**	
Max.	**87.660**	**6.727**	
Number of Spec.	**21**	**21**	

$Average_{norm}$	**0.0155**	**84.543**	**6.558**
$Standard\ Dev._{norm}$		**1.403**	**0.080**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**1.659**	**1.220**
Min.	**0.0154**	**82.106**	**6.423**
Max.	**0.0157**	**88.119**	**6.739**
Number of Spec.		**21**	**21**


Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
LaminateTension Strength (UNT1) [ksi]


Laminate Unnotched Tension Properties (UNT1) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Modulus (UNT1) [Msi]

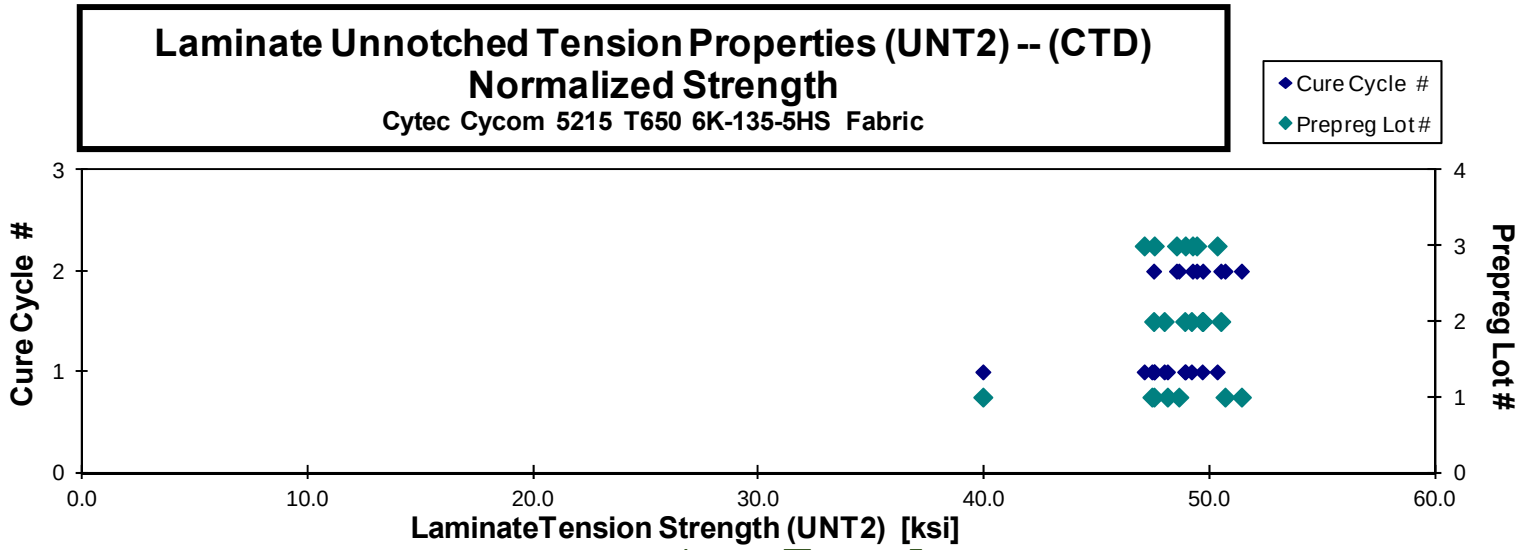
4.7 "10/80/10" Unnotched Tension 2 Properties (UNT2)

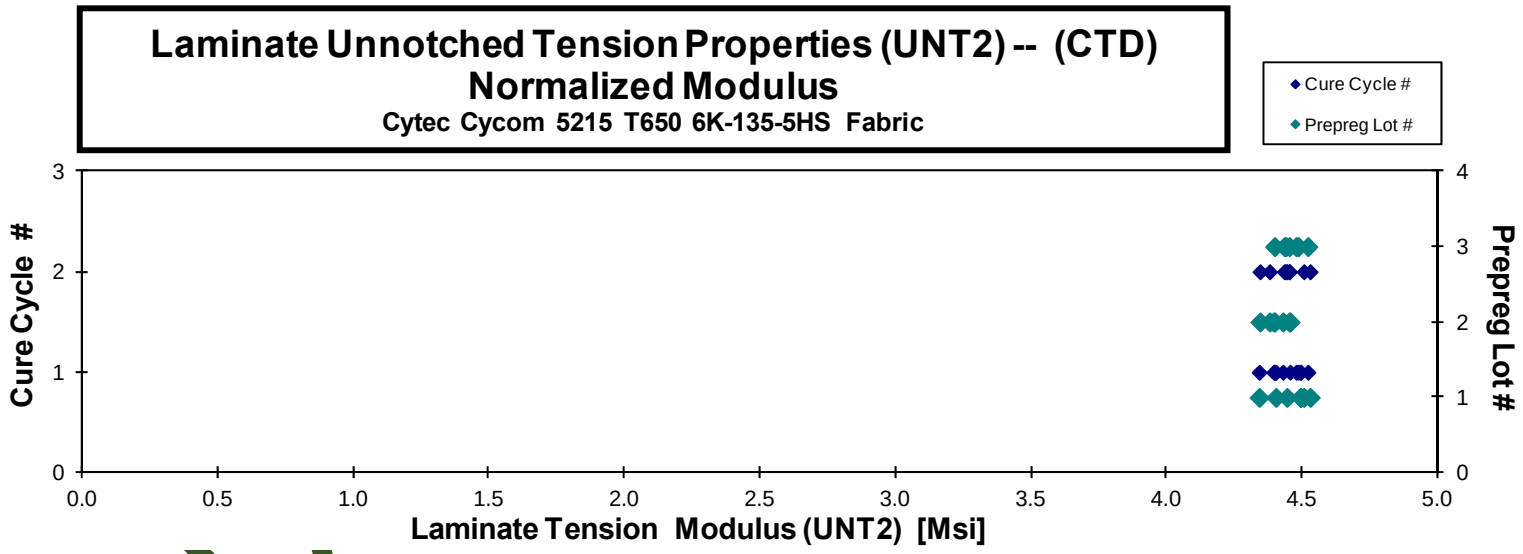
Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EBA116B	A	C1	1	1	40.363	4.388	0.153	10	LWB	0.0153	39.938	4.342
C0EBA117B	A	C1	1	1	48.235	4.570	0.152	10	AWB	0.0152	47.437	4.494
C0EBA118B	A	C1	1	1	47.774	4.426	0.154	10	AGM	0.0154	47.527	4.403
C0EBA11AB	A	C1	1	1	48.710	4.549	0.153	10	AGM	0.0153	48.124	4.494
C0EBA215B	A	C2	1	2	49.759	4.425	0.158	10	LGM	0.0158	50.679	4.507
C0EBA216B	A	C2	1	2	51.040	4.497	0.156	10	AGM	0.0156	51.408	4.530
C0EBA217B	A	C2	1	2	49.353	4.510	0.153	10	AWB	0.0153	48.632	4.444
C0EBB115B	B	C1	2	1	49.163	4.419	0.154	10	AWT	0.0154	48.894	4.395
C0EBB116B	B	C1	2	1	50.727	4.567	0.150	10	AWB	0.0150	49.189	4.429
C0EBB117B	B	C1	2	1	50.158	4.499	0.153	10	AGM	0.0153	49.668	4.455
C0EBB118B	B	C1	2	1	48.540	4.450	0.153	10	AGM	0.0153	47.981	4.399
C0EBB215B	B	C2	2	2	48.262	4.523	0.153	10	AWT	0.0153	47.515	4.453
C0EBB216B	B	C2	2	2	50.606	4.390	0.155	10	AGM	0.0155	50.492	4.380
C0EBB217B	B	C2	2	2	50.917	4.452	0.151	10	AWB	0.0151	49.690	4.345
C0EBC115B	C	C1	3	1	49.163	4.508	0.154	10	LWB	0.0154	48.920	4.486
C0EBC116B	C	C1	3	1	50.466	4.490	0.155	10	LGM	0.0155	50.331	4.478
C0EBC117B	C	C1	3	1	48.578	4.620	0.152	10	AGM	0.0152	47.544	4.521
C0EBC118B	C	C1	3	1	47.655	4.451	0.153	10	LGM	0.0153	47.097	4.399
C0EBC215B	C	C2	3	2	48.933	4.425	0.156	10	LWT	0.0156	49.238	4.453
C0EBC216B	C	C2	3	2	48.731	4.377	0.157	10	LWB	0.0157	49.423	4.439
C0EBC217B	C	C2	3	2	48.971	4.475	0.154	10	LWT	0.0154	48.528	4.434

Average	48.862	4.477	$Average_{norm}$	0.0154	48.488	4.442
Standard Dev.	2.200	0.066	$Standard\ Dev._{norm}$		2.293	0.054
Coeff. of Var. [%]	4.503	1.469	Coeff. of Var. $[\%]_{norm}$		4.729	1.216
Min.	40.363	4.377	Min.	0.0150	39.938	4.342
Max.	51.040	4.620	Max.	0.0158	51.408	4.530
Number of Spec.	21	21	Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
LaminateTension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Tension Modulus (UNT2) [Msi]

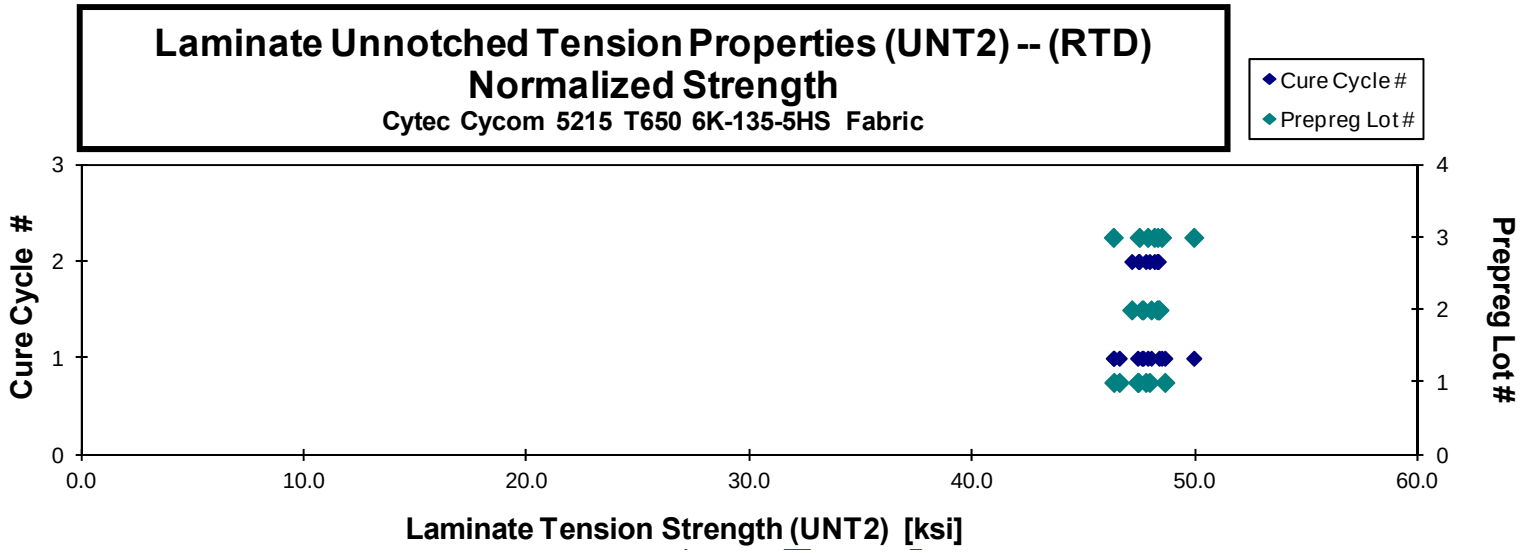
Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

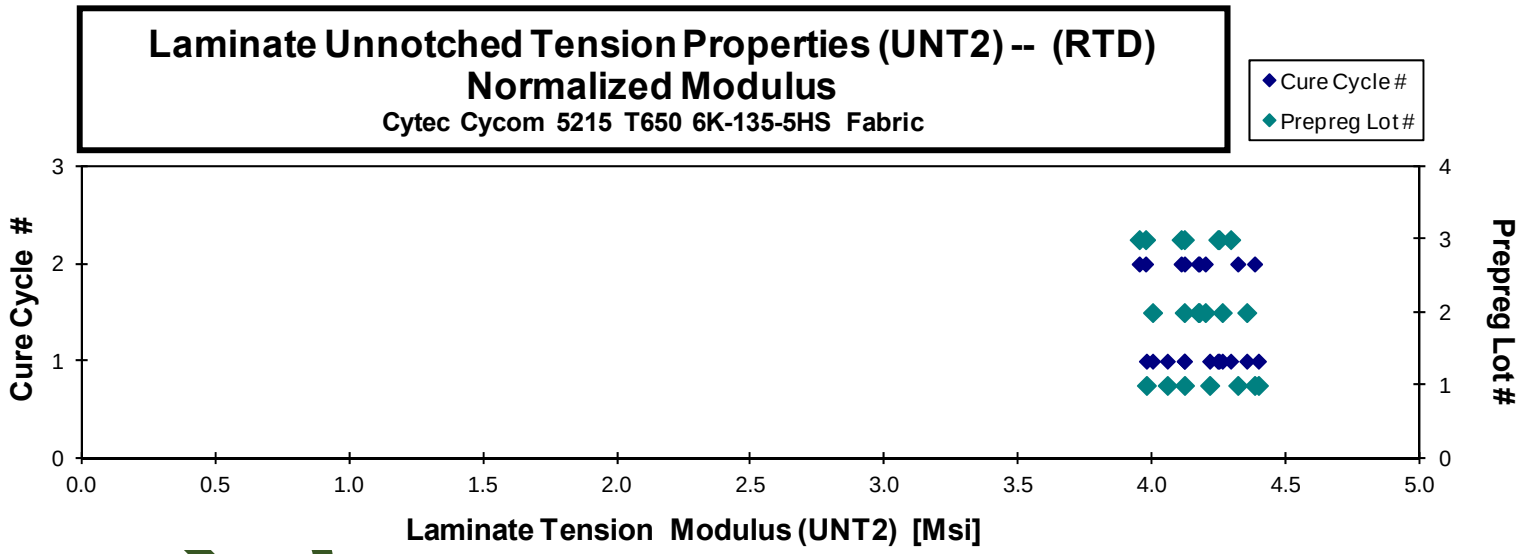
normalizing t_{ply} [in]: 0.0155

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]
C0EBA111A	A	C1	1	1	47.407	4.148	0.152	10	LWT	0.0152	46.352	4.055
C0EBA112A	A	C1	1	1	48.993	4.006	0.154	10	LGM	0.0154	48.645	3.977
C0EBA113A	A	C1	1	1	47.734	4.425	0.154	10	LGM	0.0154	47.421	4.396
C0EBA114A	A	C1	1	1	46.753	4.228	0.154	10	LGM	0.0154	46.597	4.213
C0EBA211A	A	C2	1	2	48.288	4.348	0.154	10	LGM	0.0154	47.956	4.318
C0EBA212A	A	C2	1	2	47.619	4.134	0.154	10	LGM	0.0154	47.450	4.120
C0EBA213A	A	C2	1	2	47.419	4.348	0.156	10	LGM	0.0156	47.786	4.381
C0EBB111A	B	C1	2	1	48.568	4.201	0.152	10	LGM	0.0152	47.613	4.119
C0EBB112A	B	C1	2	1	48.802	4.297	0.154	10	AWB	0.0154	48.382	4.260
C0EBB113A	B	C1	2	1	48.508	4.040	0.153	10	LGM	0.0153	48.029	4.000
C0EBB114A	B	C1	2	1	47.923	4.376	0.154	10	AGM	0.0154	47.666	4.352
C0EBB211A	B	C2	2	2	49.280	4.256	0.152	10	AWT	0.0152	48.294	4.171
C0EBB212A	B	C2	2	2	48.760	4.233	0.154	10	LGM	0.0154	48.351	4.197
C0EBB213A	B	C2	2	2	47.357	4.192	0.154	10	LGM	0.0154	47.159	4.174
C0EBC111A	C	C1	3	1	49.299	4.314	0.152	10	AGM	0.0152	48.499	4.244
C0EBC112A	C	C1	3	1	47.883	4.292	0.155	10	LGM	0.0155	47.877	4.292
C0EBC113A	C	C1	3	1	46.201	4.107	0.155	10	AGM	0.0155	46.330	4.119
C0EBC114A	C	C1	3	1	50.219	4.272	0.154	10	LGM	0.0154	49.943	4.248
C0EBC211A	C	C2	3	2	48.854	4.165	0.153	10	LWT	0.0153	48.171	4.107
C0EBC212A	C	C2	3	2	47.537	3.978	0.155	10	AGM	0.0155	47.491	3.974
C0EBC213A	C	C2	3	2	48.327	3.951	0.155	10	LGM	0.0155	48.316	3.950

	Strength	Modulus
Average	48.178	4.205
Standard Dev.	0.939	0.134
Coeff. of Var. [%]	1.949	3.178
Min.	46.201	3.951
Max.	50.219	4.425
Number of Spec.	21	21

		$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0154	47.825	4.175
$Standard\ Dev._{norm}$		0.827	0.135
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.730	3.238
Min.	0.0152	46.330	3.950
Max.	0.0156	49.943	4.396
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Tension Modulus (UNT2) [Msi]

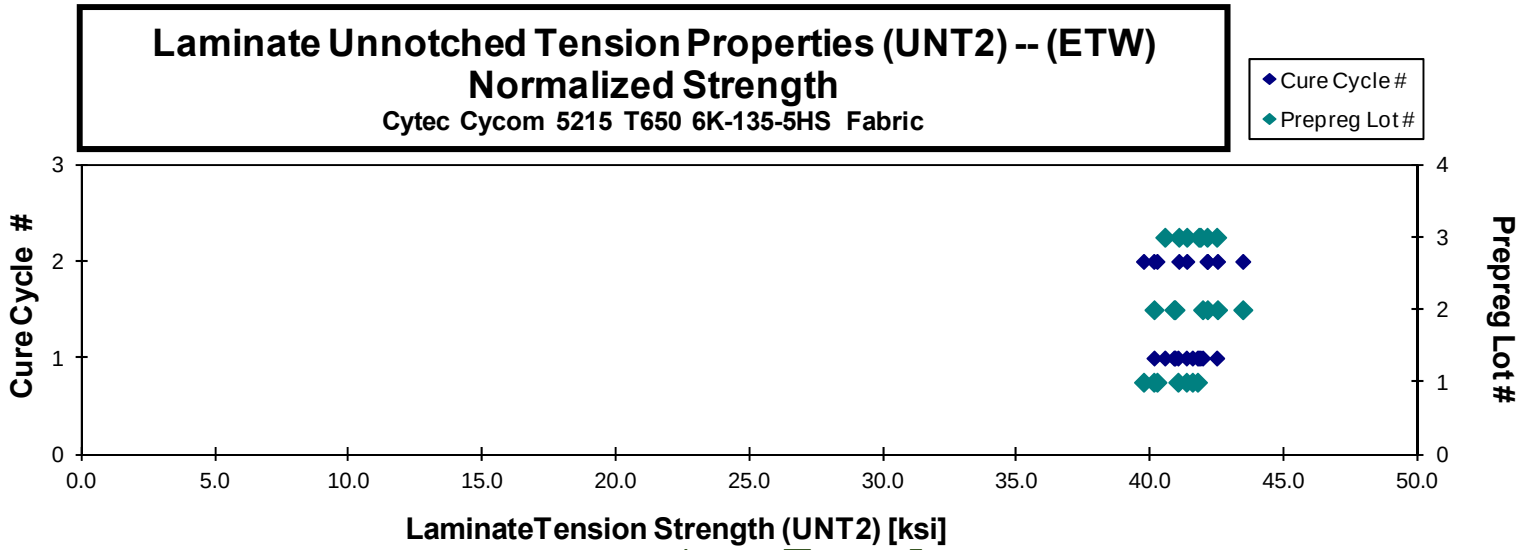
Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

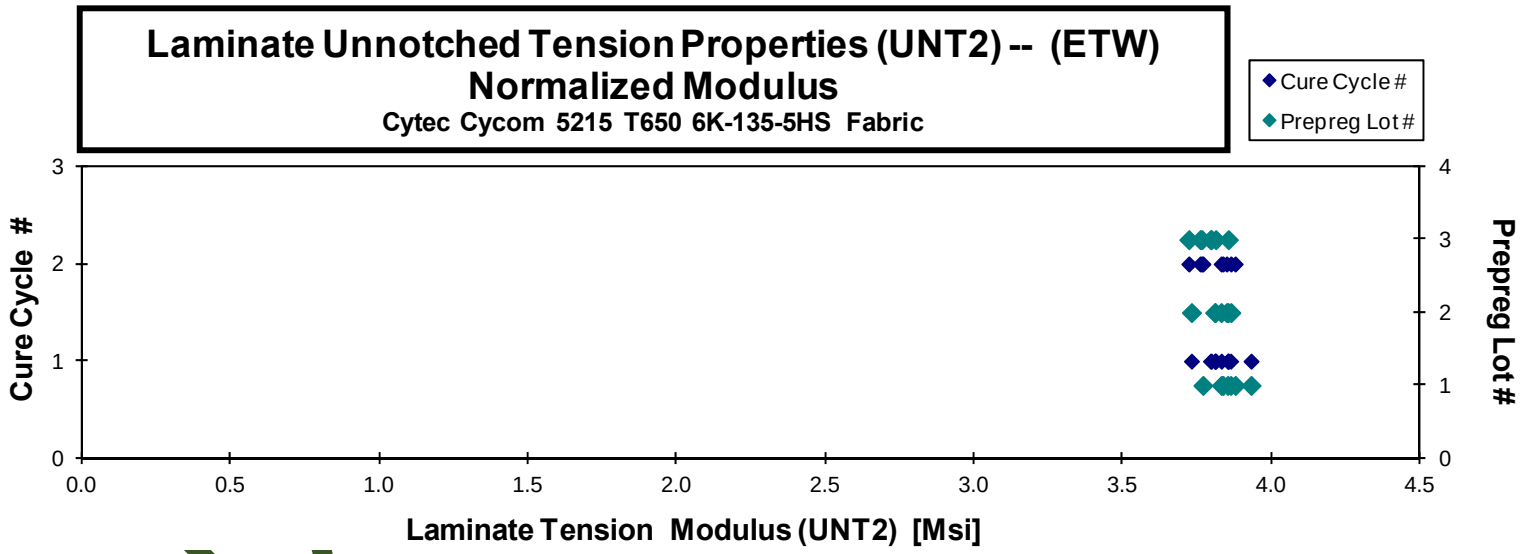
normalizing t_{ply} [in]: 0.0155

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]
C0EBA11BM	A	C1	1	1	41.158	3.865	0.155	10	AGM/DGM	0.0155	41.025	3.853
C0EBA11CM	A	C1	1	1	41.350	3.932	0.155	10	AGM/DGM	0.0155	41.341	3.931
C0EBA11DM	A	C1	1	1	41.941	3.897	0.154	10	AGM/DGM	0.0154	41.567	3.863
C0EBA11EM	A	C1	1	1	41.888	3.843	0.155	10	AGM/DGM	0.0155	41.757	3.831
C0EBA219M	A	C2	1	2	39.517	3.748	0.156	10	AGM/DGM	0.0156	39.738	3.769
C0EBA21AM	A	C2	1	2	39.919	3.806	0.156	10	AGM/DGM	0.0156	40.241	3.837
C0EBA21BM	A	C2	1	2	40.129	3.879	0.155	10	AGM/DGM	0.0155	40.121	3.878
C0EBB119M	B	C1	2	1	41.505	3.864	0.153	10	AGM/DGM	0.0153	40.916	3.810
C0EBB11AM	B	C1	2	1	42.182	3.831	0.154	10	AGM/DGM	0.0154	41.950	3.810
C0EBB11BM	B	C1	2	1	40.978	3.864	0.155	10	AGM/DGM	0.0155	40.876	3.854
C0EBB11CM	B	C1	2	1	41.346	3.844	0.150	10	AGM/DGM	0.0150	40.132	3.731
C0EBB219M	B	C2	2	2	42.706	3.849	0.154	10	DGM	0.0154	42.509	3.831
C0EBB21AM	B	C2	2	2	43.567	3.873	0.155	10	AGM/DGM	0.0155	43.455	3.863
C0EBB21BM	B	C2	2	2	42.109	3.847	0.155	10	DGM	0.0155	42.127	3.849
C0EBC119M	C	C1	3	1	40.627	3.806	0.155	10	AGM/DGM	0.0155	40.535	3.797
C0EBC11AM	C	C1	3	1	42.588	3.865	0.155	10	AWT/DGM	0.0155	42.478	3.855
C0EBC11BM	C	C1	3	1	41.932	3.806	0.155	10	AGM/DGM	0.0155	41.805	3.795
C0EBC11CM	C	C1	3	1	42.083	3.832	0.154	10	AGM/DGM	0.0154	41.866	3.812
C0EBC219M	C	C2	3	2	40.910	3.752	0.156	10	AWB/DGM	0.0156	41.060	3.766
C0EBC21AM	C	C2	3	2	41.967	3.747	0.156	10	AGM/DGM	0.0156	42.115	3.760
C0EBC21BM	C	C2	3	2	40.873	3.679	0.157	10	AGM/DGM	0.0157	41.357	3.722

	Strength	Modulus
Average	41.489	3.830
Standard Dev.	0.977	0.059
Coeff. of Var. [%]	2.355	1.537
Min.	39.517	3.679
Max.	43.567	3.932
Number of Spec.	21	21

	t_{ply}	$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0155	41.380	3.820
$Standard\ Dev._{norm}$		0.932	0.051
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.251	1.339
Min.	0.0150	39.738	3.722
Max.	0.0157	43.455	3.931
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
LaminateTension Strength (UNT2) [ksi]


Laminate Unnotched Tension Properties (UNT2) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
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]

4.8 "40/20/40" Unnotched Tension 3 Properties (UNT3)

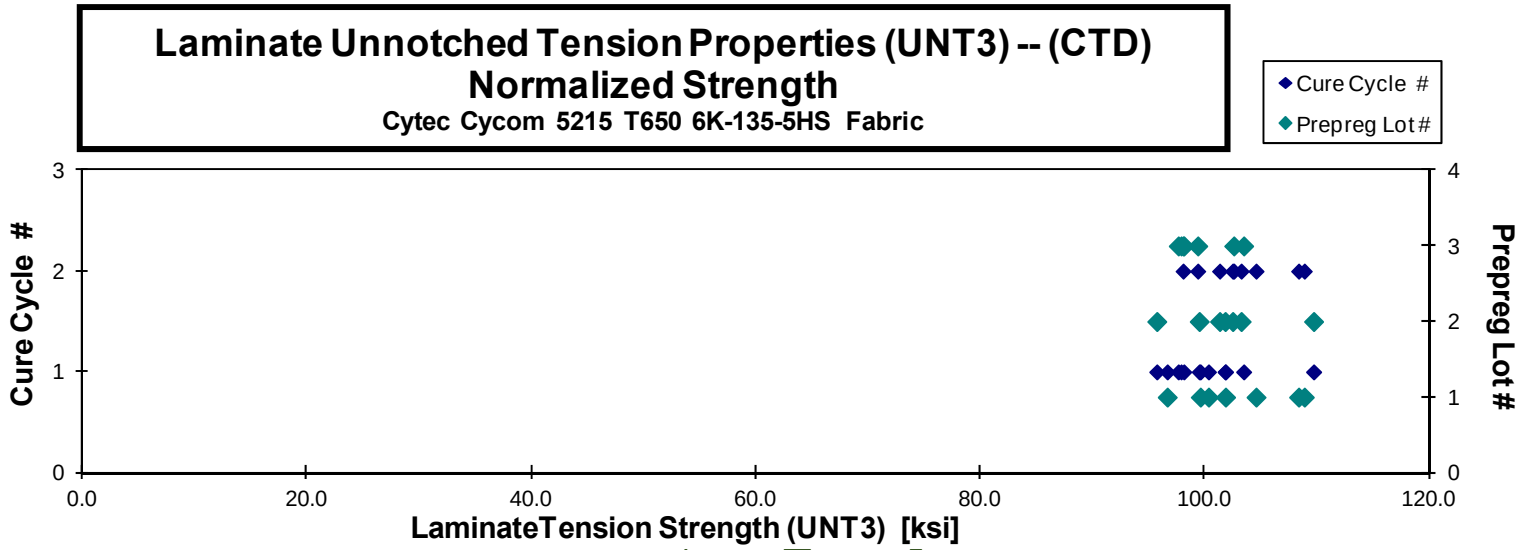
Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

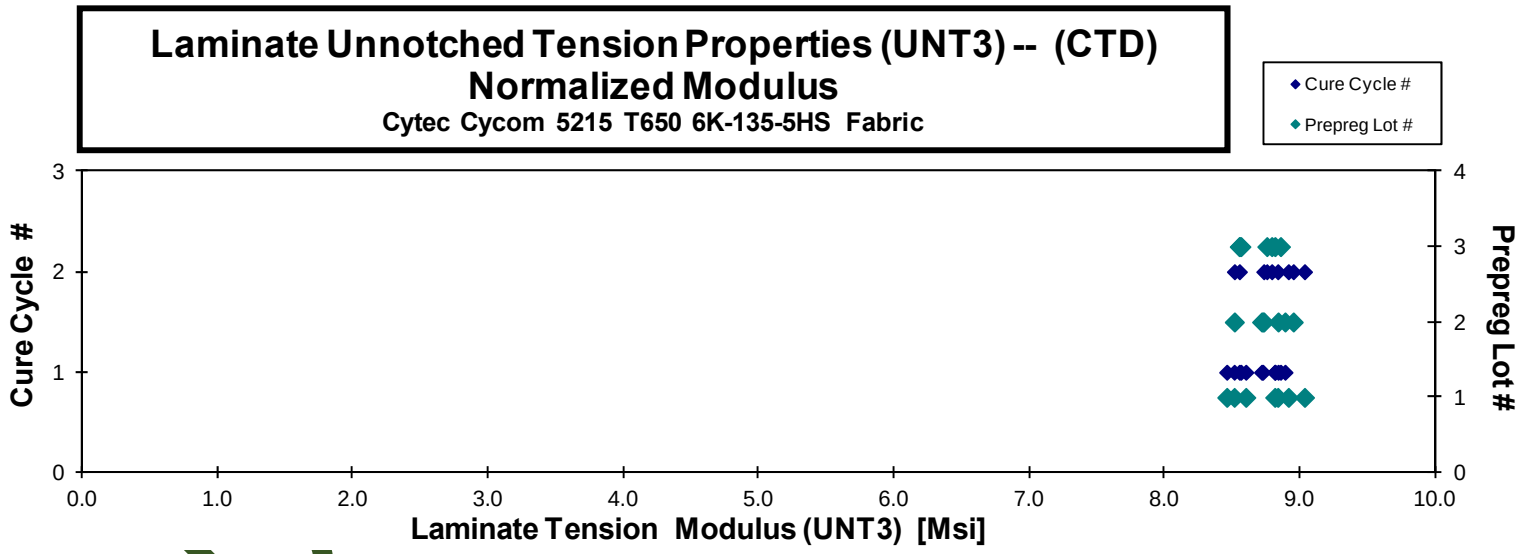
normalizing t_{ply} [in]: 0.0155

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]
C0ECA116B	A	C1	1	1	98.307	8.403	0.157	10	LGM	0.0157	99.607	8.514
C0ECA117B	A	C1	1	1	101.081	8.535	0.156	10	LWT/LWB	0.0156	101.853	8.600
C0ECA118B	A	C1	1	1	94.805	8.645	0.158	10	LGM	0.0158	96.660	8.814
C0ECA119B	A	C1	1	1	102.257	8.622	0.152	10	LGM	0.0152	100.333	8.460
C0ECA215B	A	C2	1	2	103.098	8.907	0.157	10	LWT/LWB	0.0157	104.572	9.035
C0ECA216B	A	C2	1	2	107.535	8.847	0.156	10	DGM/LGM	0.0156	108.368	8.915
C0ECA217B	A	C2	1	2	109.815	8.913	0.154	10	LGM/DGM	0.0154	108.870	8.837
C0ECB119B	B	C1	2	1	97.148	9.022	0.153	10	LWB	0.0153	95.727	8.890
C0ECB11AB	B	C1	2	1	102.187	8.749	0.154	10	LWT / LWB	0.0154	101.813	8.717
C0ECB11BB	B	C1	2	1	109.854	8.852	0.155	10	LWT / LWB	0.0155	109.701	8.839
C0ECB11CB	B	C1	2	1	99.362	8.713	0.155	10	LWT / LWB	0.0155	99.512	8.726
C0ECB215B	B	C2	2	2	99.984	8.617	0.157	10	LGM / DGM	0.0157	101.328	8.733
C0ECB216B	B	C2	2	2	103.489	8.972	0.155	10	LGM / DGM	0.0155	103.245	8.951
C0ECB217B	B	C2	2	2	104.669	8.697	0.152	10	LWT / DWT	0.0152	102.485	8.516
C0ECC115B	C	C1	3	1	98.303	8.873	0.155	10	LGM / LWB	0.0155	98.134	8.857
C0ECC116B	C	C1	3	1	98.544	8.897	0.154	10	LGM	0.0154	97.644	8.816
C0ECC117B	C	C1	3	1	105.684	8.748	0.152	10	LGM	0.0152	103.468	8.564
C0ECC118B	C	C1	3	1	99.288	8.675	0.153	10	LGM	0.0153	97.890	8.553
C0ECC215B	C	C2	3	2	97.145	8.709	0.156	10	LGM	0.0156	98.074	8.792
C0ECC216B	C	C2	3	2	98.675	8.694	0.156	10	LWT/LWB	0.0156	99.375	8.756
C0ECC217B	C	C2	3	2	103.722	8.648	0.153	10	LWT/LWB	0.0153	102.584	8.553

	Strength [ksi]	Modulus [Msi]
Average	101.664	8.749
Standard Dev.	4.163	0.153
Coeff. of Var. [%]	4.095	1.748
Min.	94.805	8.403
Max.	109.854	9.022
Number of Spec.	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0155	101.488	8.735
Standard $Dev._{norm}$		3.928	0.163
Coeff. of $Var._{norm}$ [%]		3.871	1.868
Min.	0.0152	95.727	8.460
Max.	0.0158	109.701	9.035
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
LaminateTension Strength (UNT3) [ksi]


Laminate Unnotched Tension Properties (UNT3) -- (CTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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0.0
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3.0
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5.0
6.0
7.0
8.0
9.0
10.0
Laminate Tension Modulus (UNT3) [Msi]

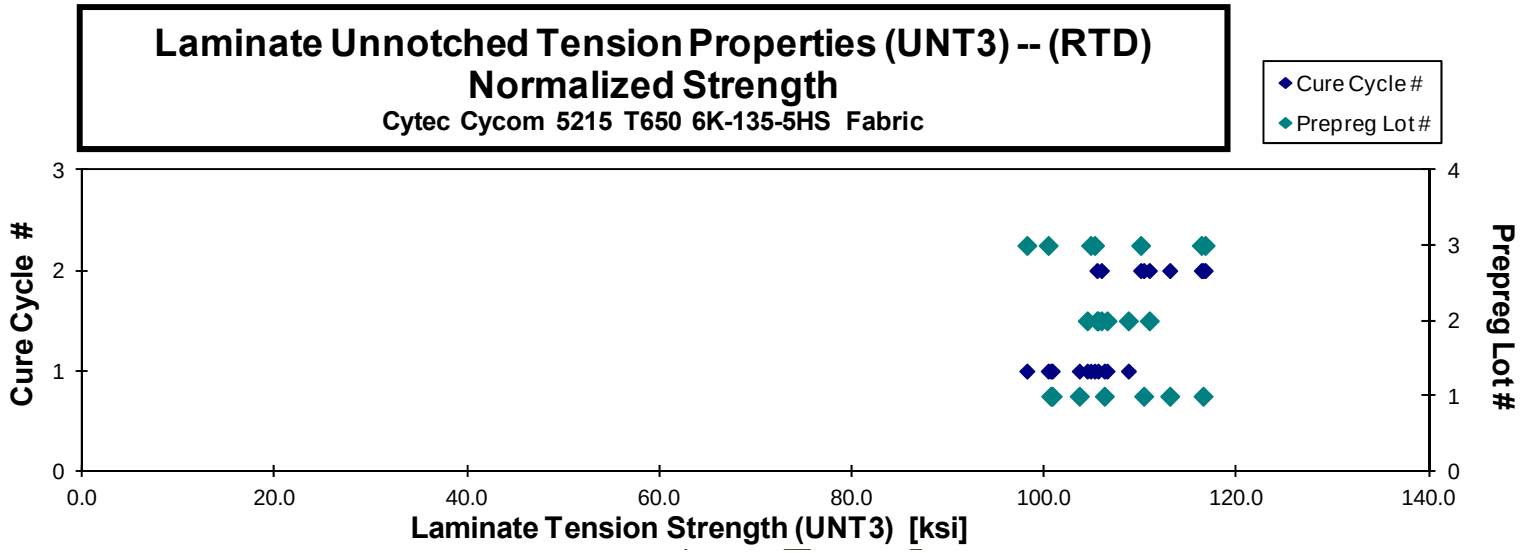
Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0ECA111A	A	C1	1	1	105.325	8.535	0.153	10	LWT / LWB	0.0153	103.627	8.398
C0ECA112A	A	C1	1	1	104.513	8.219	0.158	10	LGM	0.0158	106.233	8.354
C0ECA113A	A	C1	1	1	98.992	8.272	0.158	10	LWB / LWT	0.0158	100.812	8.425
C0ECA114A	A	C1	1	1	99.220	8.213	0.157	10	LGM	0.0157	100.660	8.332
C0ECA211A	A	C2	1	2	111.411	8.772	0.153	10	LGM	0.0153	110.321	8.687
C0ECA212A	A	C2	1	2	115.696	8.566	0.156	10	LGM / LWT / LWB	0.0156	116.492	8.625
C0ECA213A	A	C2	1	2	111.720	8.349	0.157	10	LGM / LWT / LWB	0.0157	113.029	8.446
C0ECB113A	B	C1	2	1	105.063	8.538	0.154	10	LGM	0.0154	104.453	8.489
C0ECB114A	B	C1	2	1	108.520	8.788	0.155	10	LGM	0.0155	108.730	8.805
C0ECB115A	B	C1	2	1	106.567	8.529	0.155	10	LWB	0.0155	106.510	8.524
C0ECB116A	B	C1	2	1	105.178	8.474	0.156	10	LGM	0.0156	105.574	8.506
C0ECB211A	B	C2	2	2	107.353	8.660	0.153	10	LWT	0.0153	105.922	8.544
C0ECB212A	B	C2	2	2	111.951	8.483	0.154	10	LGM/LWT	0.0154	110.904	8.403
C0ECB213A	B	C2	2	2	105.623	8.383	0.155	10	LGM	0.0155	105.464	8.370
C0ECC111A	C	C1	3	1	106.376	8.440	0.153	10	LGM	0.0153	105.210	8.347
C0ECC112A	C	C1	3	1	101.808	8.582	0.153	10	LGM	0.0153	100.396	8.463
C0ECC113A	C	C1	3	1	105.421	8.564	0.154	10	LWB	0.0154	104.809	8.515
C0ECC114A	C	C1	3	1	98.748	8.448	0.154	10	LGM	0.0154	98.175	8.399
C0ECC211A	C	C2	3	2	117.387	8.496	0.154	10	LWT / LWB	0.0154	116.315	8.418
C0ECC212A	C	C2	3	2	115.872	8.425	0.156	10	LWT / LWB	0.0156	116.706	8.486
C0ECC213A	C	C2	3	2	109.151	8.501	0.156	10	LWT / LWB	0.0156	110.008	8.568

	Strength [ksi]	Modulus [Msi]
Average	107.233	8.488
Standard Dev.	5.362	0.152
Coeff. of Var. [%]	5.001	1.789
Min.	98.748	8.213
Max.	117.387	8.788
Number of Spec.	21	21

	t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0155	107.159	8.481
$Standard\ Dev._{norm}$		5.373	0.118
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.014	1.396
Min.	0.0153	98.175	8.332
Max.	0.0158	116.706	8.805
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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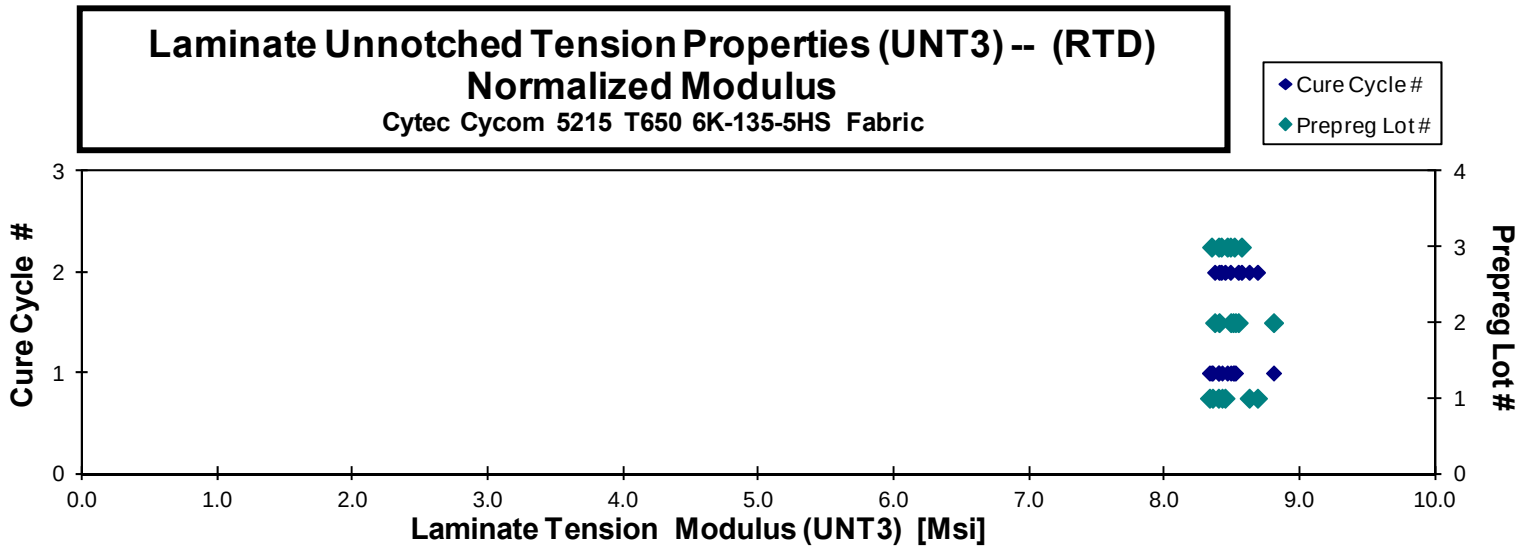
20.0
40.0
60.0
80.0
100.0
120.0
140.0
Laminate Tension Strength (UNT3) [ksi]


Laminate Unnotched Tension Properties (UNT3) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
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Laminate Tension Modulus (UNT3) [Msi]

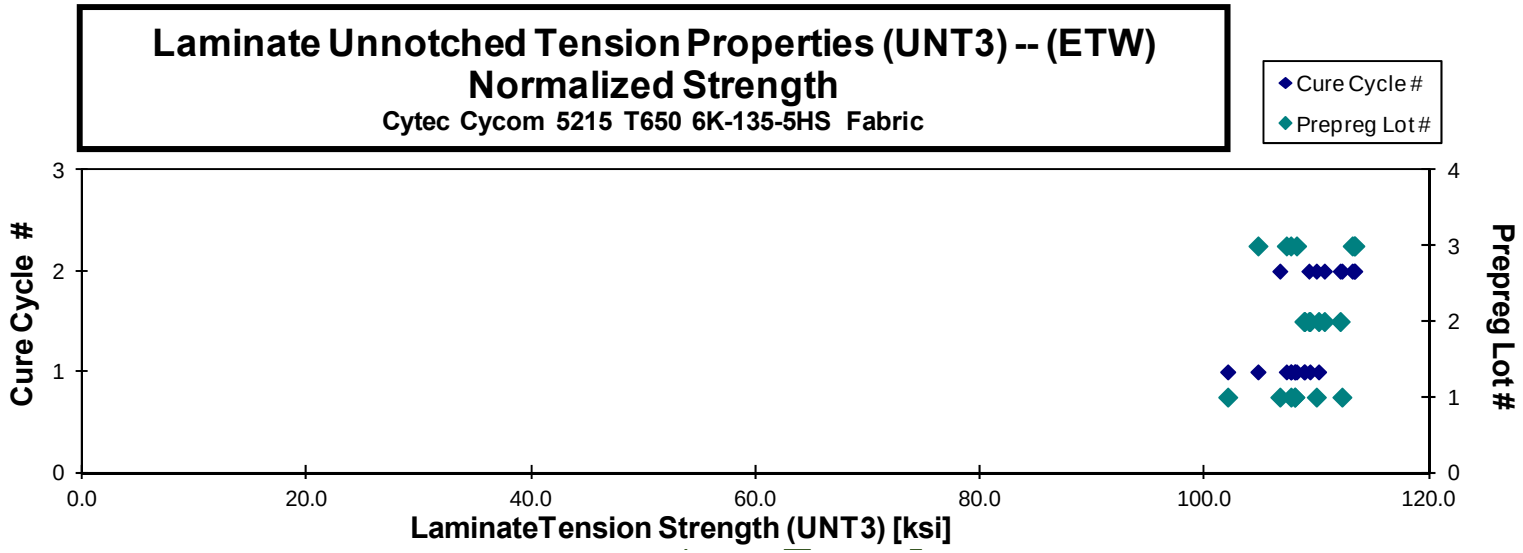
Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0ECA11BM	A	C1	1	1	105.441	8.366	0.158	10	LGM	0.0158	107.674	8.543
C0ECA11CM	A	C1	1	1	106.660	8.485	0.157	10	LGM	0.0157	108.025	8.593
C0ECA11DM	A	C1	1	1	107.580	8.626	0.156	10	LWB	0.0156	108.020	8.661
C0ECA11EM	A	C1	1	1	100.684	8.399	0.157	10	LWT	0.0157	102.048	8.513
C0ECA219M	A	C2	1	2	105.861	8.434	0.156	10	LGM	0.0156	106.692	8.500
C0ECA21AM	A	C2	1	2	109.497	8.562	0.156	10	LWT/LGM	0.0156	109.945	8.597
C0ECA21BM	A	C2	1	2	111.601	8.893	0.156	10	LGM	0.0156	112.225	8.943
C0ECB11DM	B	C1	2	1	109.949	8.698	0.154	10	LGM/AGM	0.0154	108.896	8.615
C0ECB11EM	B	C1	2	1	109.671	8.646	0.155	10	LGM/AGM	0.0155	109.376	8.623
C0ECB11FM	B	C1	2	1	109.348	8.596	0.154	10	LGM/LWT/DGM	0.0154	108.842	8.557
C0ECB11GM	B	C1	2	1	110.278	8.422	0.155	10	LGM/AGM	0.0155	110.148	8.412
C0ECB219M	B	C2	2	2	110.868	8.641	0.153	10	LGM	0.0153	109.283	8.518
C0ECB21AM	B	C2	2	2	111.381	8.623	0.154	10	XGM/LGM	0.0154	110.663	8.568
C0ECB21BM	B	C2	2	2	112.728	8.519	0.154	10	XGM	0.0154	112.073	8.469
C0ECC119M	C	C1	3	1	108.568	8.396	0.154	10	XGM/LGM	0.0154	108.183	8.366
C0ECC11AM	C	C1	3	1	108.651	8.415	0.154	10	LWB/LWT	0.0154	107.658	8.338
C0ECC11BM	C	C1	3	1	108.155	8.444	0.154	10	LGM	0.0154	107.271	8.375
C0ECC11CM	C	C1	3	1	105.286	8.706	0.154	10	LWT/LWB/AWT	0.0154	104.743	8.661
C0ECC219M	C	C2	3	2	112.415	8.434	0.156	10	LGM	0.0156	113.297	8.501
C0ECC21AM	C	C2	3	2	111.856	8.397	0.157	10	LWB/LWT	0.0157	113.143	8.494
C0ECC21BM	C	C2	3	2	113.654	8.825	0.155	10	LGM/LWT	0.0155	113.372	8.804

	Strength	Modulus
Average	109.054	8.549
Standard Dev.	3.071	0.150
Coeff. of Var. [%]	2.816	1.760
Min.	100.684	8.366
Max.	113.654	8.893
Number of Spec.	21	21

		$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0155	109.123	8.555
Standard $Dev._{norm}$		2.832	0.142
Coeff. of Var. $[\%]_{norm}$		2.595	1.658
Min.	0.0153	102.048	8.338
Max.	0.0158	113.372	8.943
Number of Spec.		21	21


Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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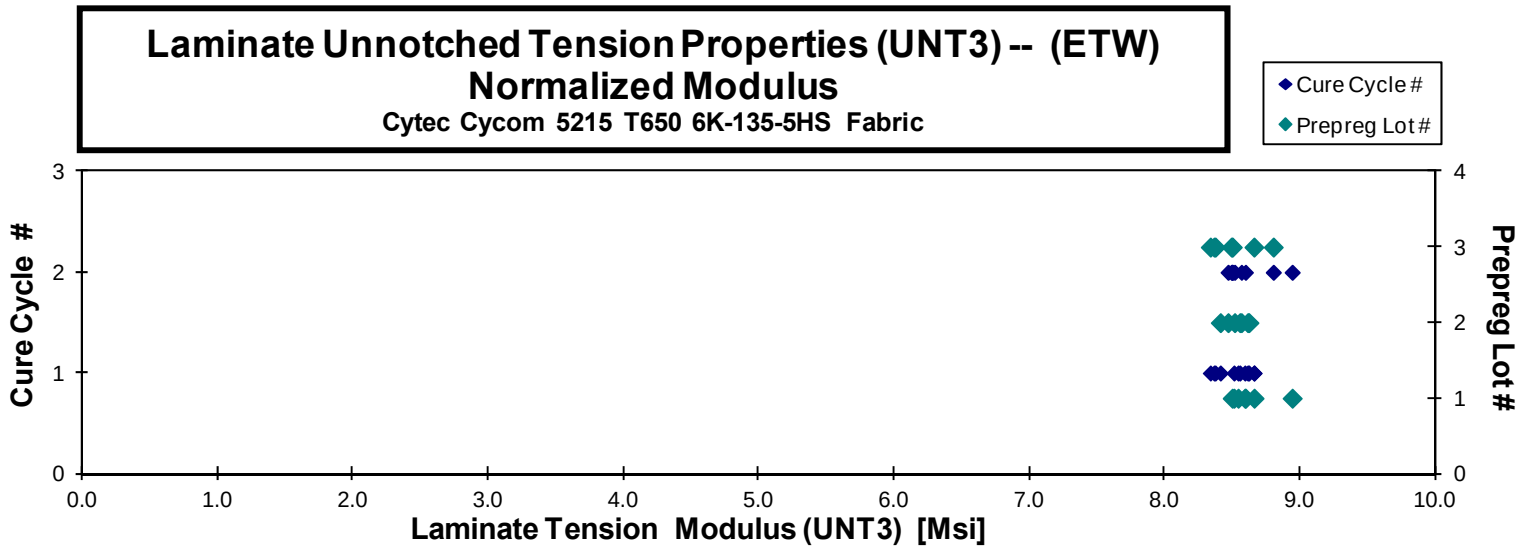
80.0
100.0
120.0
LaminateTension Strength (UNT3) [ksi]


Laminate Unnotched Tension Properties (UNT3) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
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Laminate Tension Modulus (UNT3) [Msi]

4.9 "25/50/25" Unnotched Compression 1 Properties (UNC1)

Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

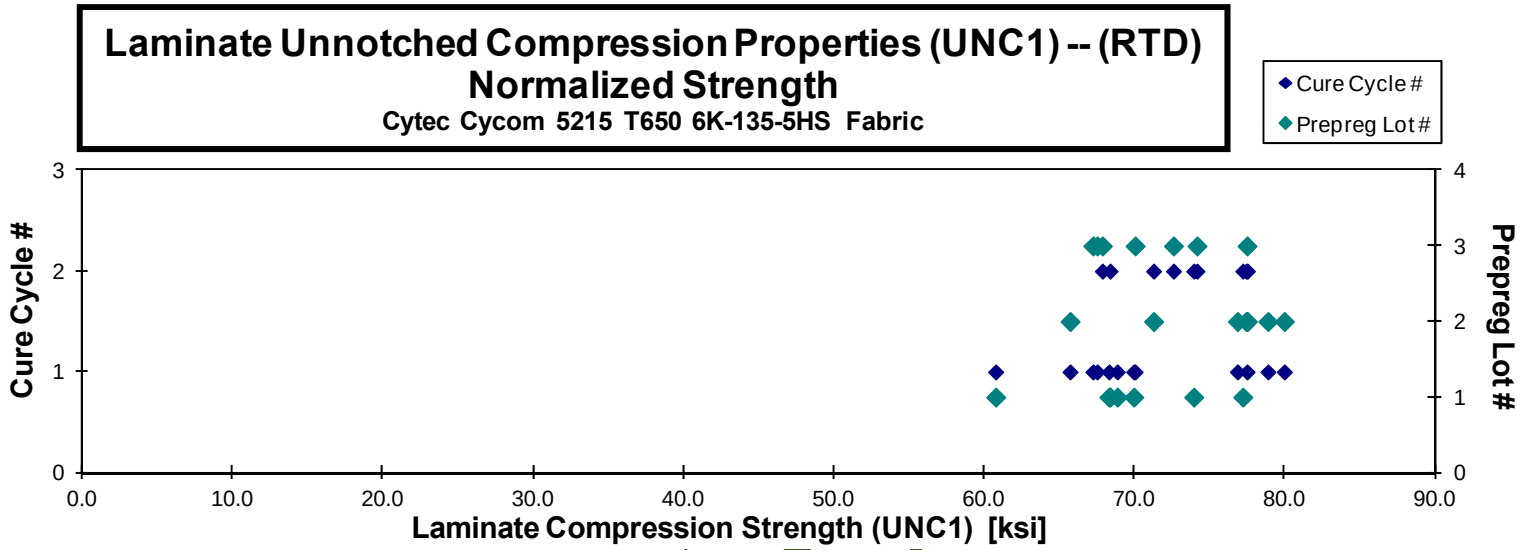
normalizing t_{ply} [in]: 0.0155

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]
C0EWA111A	A	C1	1	1	73.580	6.508	0.323	0.118	8	BGM	0.0147	69.950	6.187
C0EWA112A	A	C1	1	1		6.256	0.321	0.121	8	ENDCRUSH	0.0151		6.113
C0EWA113A	A	C1	1	1	62.215	6.384	0.348	0.121	8	BGM	0.0151	60.760	6.234
C0EWA114A	A	C1	1	1	69.732	6.106	0.354	0.122	8	BGM	0.0153	68.851	6.029
C0EWA115A	A	C1	1	1	69.530	6.259	0.335	0.122	8	BGM	0.0152	68.296	6.148
C0EWA211A	A	C2	1	2	70.235	6.719	0.339	0.121	8	BGM	0.0151	68.375	6.541
C0EWA212A	A	C2	1	2	75.152	6.591	0.363	0.122	8	BGM	0.0153	73.940	6.485
C0EWA213A	A	C2	1	2	77.486	6.297	0.332	0.124	8	BGM	0.0154	77.205	6.274
C0EWB111A	B	C1	2	1	80.203	6.394	0.340	0.122	8	BGM	0.0152	78.877	6.288
C0EWB112A	B	C1	2	1	65.835	6.113	0.308	0.124	8	BGM	0.0155	65.711	6.102
C0EWB113A	B	C1	2	1	80.565	6.513	0.358	0.123	8	BGM	0.0154	79.970	6.465
C0EWB114A	B	C1	2	1	76.583	5.926	0.320	0.124	8	BGM	0.0156	76.850	5.947
C0EWB211A	B	C2	2	2	74.429	6.754	0.364	0.119	8	BGM	0.0148	71.268	6.467
C0EWB212A	B	C2	2	2	79.002	6.504	0.359	0.122	8	BGM	0.0152	77.420	6.374
C0EWB213A	B	C2	2	2	79.353	7.112	0.362	0.121	8	BGM	0.0151	77.508	6.947
C0EWC111A	C	C1	3	1	71.956	6.258	0.338	0.121	8	BGM	0.0151	70.041	6.091
C0EWC112A	C	C1	3	1	78.683	6.504	0.316	0.122	8	BGM	0.0153	77.487	6.405
C0EWC113A	C	C1	3	1	68.065	6.296	0.326	0.123	8	BGM	0.0154	67.516	6.245
C0EWC114A	C	C1	3	1	67.114	6.179	0.350	0.124	8	BGM	0.0155	67.231	6.190
C0EWC211A	C	C2	3	2	77.392	6.545	0.330	0.119	8	BGM	0.0149	74.157	6.272
C0EWC212A	C	C2	3	2	75.400	6.498	0.322	0.119	8	BGM	0.0149	72.593	6.256
C0EWC213A	C	C2	3	2	69.948	6.361	0.328	0.120	8	BGM	0.0150	67.861	6.171

COMPRESSIVE STRENGTH FOR C0EWA 112A WAS NOT REPORTED AS UNACCEPTABLE FAILURE MODE WAS OBSERVED.

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	73.450	6.413	0.338
Standard Dev.	5.225	0.255	0.017
Coeff. of Var. [%]	7.114	3.983	4.991
Min.	62.215	5.926	0.308
Max.	80.565	7.112	0.364
Number of Spec.	21	22	22

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0152	71.994	6.283
Standard $Dev._{norm}$		5.154	0.215
Coeff. of Var. $[\%]_{norm}$		7.159	3.416
Min.	0.0147	60.760	5.947
Max.	0.0156	79.970	6.947
Number of Spec.		21	22


Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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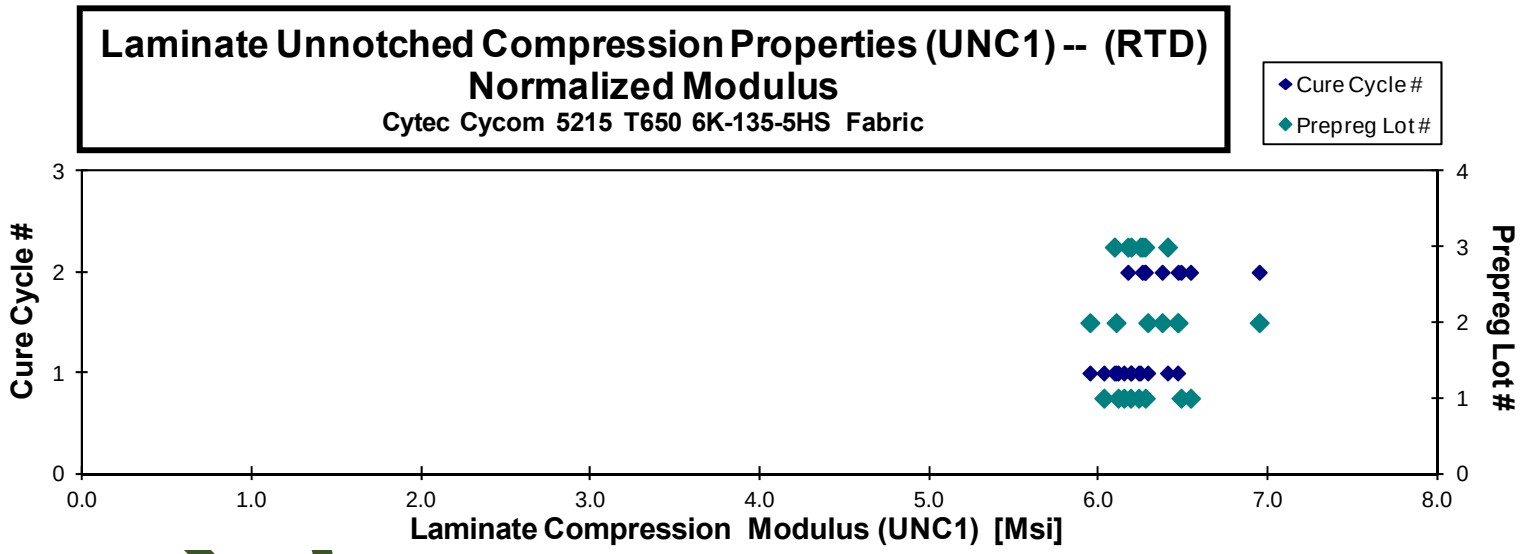
90.0
Laminate Compression Strength (UNC1) [ksi]


Laminate Unnotched Compression Properties (UNC1) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
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6.0
7.0
8.0
Laminate Compression Modulus (UNC1) [Msi]

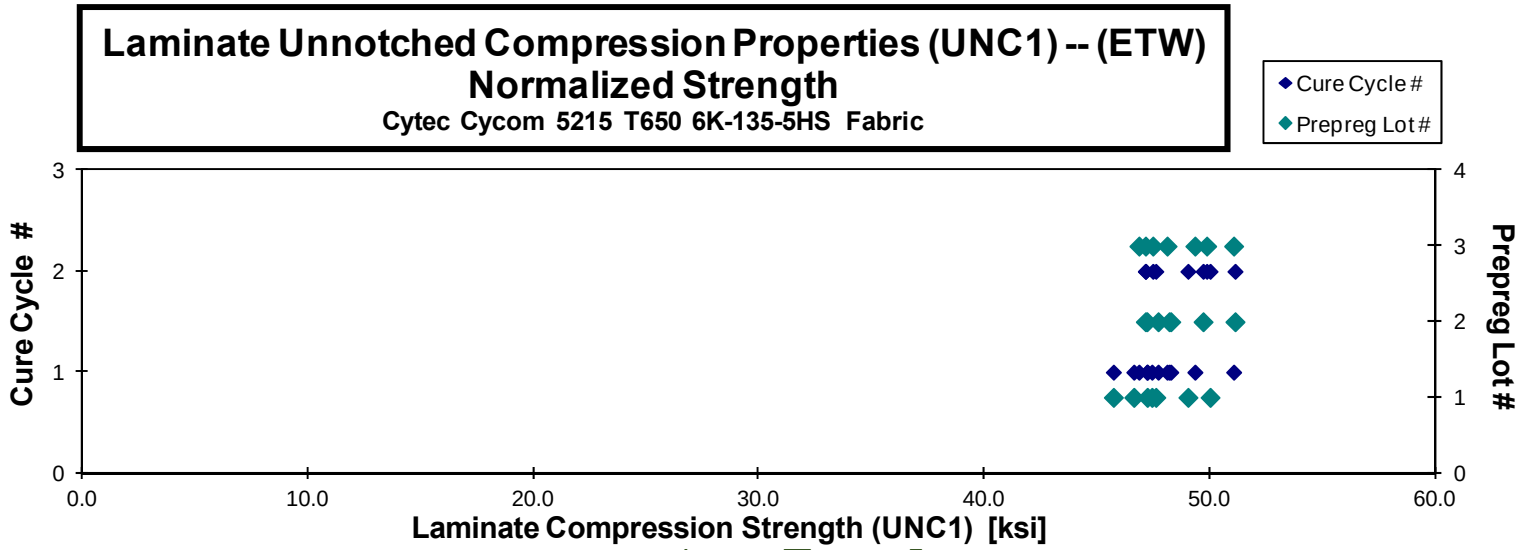
Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

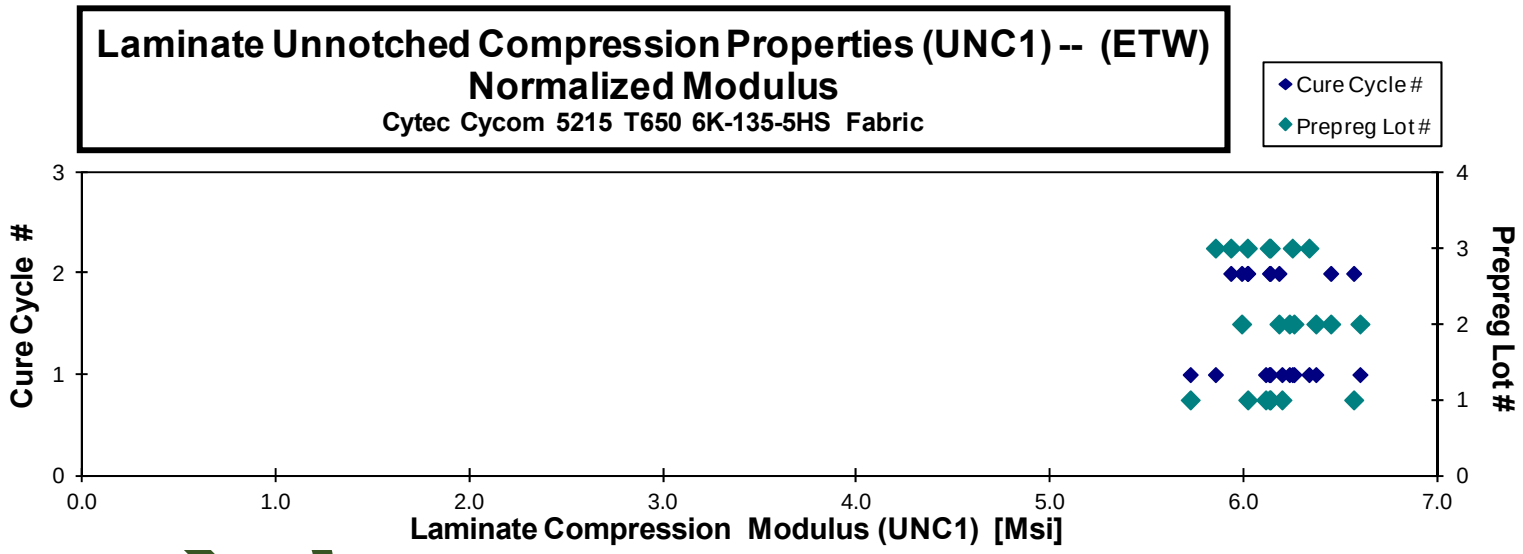
normalizing t_{ply} [in]: 0.0155

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]
C0EWA116M	A	C1	1	1		6.222	0.350	0.122	8	BGM	0.0153		6.135
C0EWA117M	A	C1	1	1		5.813	0.355	0.122	8	BGM	0.0153		5.722
C0EWA118M	A	C1	1	1		6.209	0.353	0.122	8	HAB / HIB	0.0153		6.111
C0EWA119M	A	C1	1	1		6.282	0.369	0.122	8	BGM	0.0153		6.196
C0EWA11AM	A	C1	1	1	46.548			0.122	8	BGM	0.0152	45.728	
C0EWA11BM	A	C1	1	1	47.458			0.122	8	BGM	0.0152	46.635	
C0EWA11CM	A	C1	1	1	47.907			0.122	8	BGM	0.0153	47.231	
C0EWA11DM	A	C1	1	1	49.982			0.118	8	BGM	0.0147	47.436	
C0EWA215M	A	C2	1	2		6.561	0.378	0.124	8	BGM	0.0155		6.566
C0EWA216M	A	C2	1	2		6.003	0.363	0.124	8	BGM	0.0155		6.019
C0EWA217M	A	C2	1	2		6.151	0.357	0.124	8	BGM	0.0155		6.131
C0EWA218M	A	C2	1	2	47.507			0.124	8	BGM	0.0155	47.610	
C0EWA219M	A	C2	1	2	50.091			0.124	8	BGM	0.0155	50.017	
C0EWA21AM	A	C2	1	2	48.799			0.125	8	BGM	0.0156	49.035	
C0EWB116M	B	C1	2	1		6.223	0.343	0.124	8	BGM	0.0155		6.234
C0EWB117M	B	C1	2	1		6.292	0.352	0.123	8	BGM	0.0154		6.258
C0EWB118M	B	C1	2	1		6.575	0.400	0.124	8	BGM	0.0156		6.599
C0EWB119M	B	C1	2	1		6.370	0.362	0.124	8	BGM	0.0155		6.371
C0EWB11AM	B	C1	2	1	48.219			0.124	8	BGM	0.0155	48.200	
C0EWB11BM	B	C1	2	1	49.295			0.121	8	BGM	0.0152	48.275	
C0EWB11CM	B	C1	2	1	47.939			0.122	8	BGM	0.0153	47.218	
C0EWB11DM	B	C1	2	1	48.086			0.123	8	BGM	0.0154	47.712	
C0EWB215M	B	C2	2	2		6.298	0.380	0.122	8	BGM	0.0152		6.180
C0EWB216M	B	C2	2	2		6.583	0.398	0.121	8	BGM	0.0152		6.448
C0EWB217M	B	C2	2	2		6.024	0.397	0.123	8	BGM	0.0154		5.987
C0EWB218M	B	C2	2	2	47.648			0.123	8	BGM	0.0153	47.148	
C0EWB219M	B	C2	2	2	50.011			0.123	8	BGM	0.0154	49.708	
C0EWB21AM	B	C2	2	2	51.116			0.124	8	BGM	0.0155	51.123	
C0EWC116M	C	C1	3	1		6.136	0.374	0.124	8	BGM	0.0155		6.130
C0EWC117M	C	C1	3	1		6.261	0.366	0.124	8	BGM	0.0155		6.249
C0EWC118M	C	C1	3	1		6.235	0.356	0.126	8	BGM	0.0158		6.335
C0EWC119M	C	C1	3	1		5.808	0.321	0.125	8	BGM	0.0156		5.852
C0EWC11AM	C	C1	3	1	51.043			0.124	8	BGM	0.0155	51.064	
C0EWC11BM	C	C1	3	1	49.880			0.123	8	BGM	0.0153	49.343	
C0EWC11CM	C	C1	3	1	48.501			0.123	8	BGM	0.0154	48.110	
C0EWC11DM	C	C1	3	1	46.487			0.125	8	BGM	0.0156	46.862	
C0EWC215M	C	C2	3	2		6.183	0.374	0.123	8	BGM	0.0154		6.135
C0EWC216M	C	C2	3	2		6.184	0.349	0.121	8	BGM	0.0151		6.017
C0EWC217M	C	C2	3	2		6.098	0.362	0.121	8	BGM	0.0151		5.931
C0EWC218M	C	C2	3	2	51.237			0.121	8	BGM	0.0151	49.867	
C0EWC219M	C	C2	3	2	48.496			0.121	8	BGM	0.0151	47.153	
C0EWC21AM	C	C2	3	2	48.588			0.121	8	BGM	0.0151	47.478	

	Strength	Modulus	Poisson's Ratio
Average	48.802	6.215	0.365
Standard Dev.	1.416	0.208	0.019
Coeff. of Var. [%]	2.902	3.343	5.254
Min.	46.487	5.808	0.321
Max.	51.237	6.583	0.400
Number of Spec.	21	21	21

	t_{ply}	$Strength_{norm}$	$Modulus_{norm}$
$Average_{norm}$	0.0154	48.236	6.172
$Standard\ Dev._{norm}$		1.470	0.218
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.048	3.534
Min.	0.0147	45.728	5.722
Max.	0.0158	51.123	6.599
Number of Spec.		21	21


Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength (UNC1) [ksi]


Laminate Unnotched Compression Properties (UNC1) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.10 "10/80/10" Unnotched Compression 2 Properties (UNC2)

Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

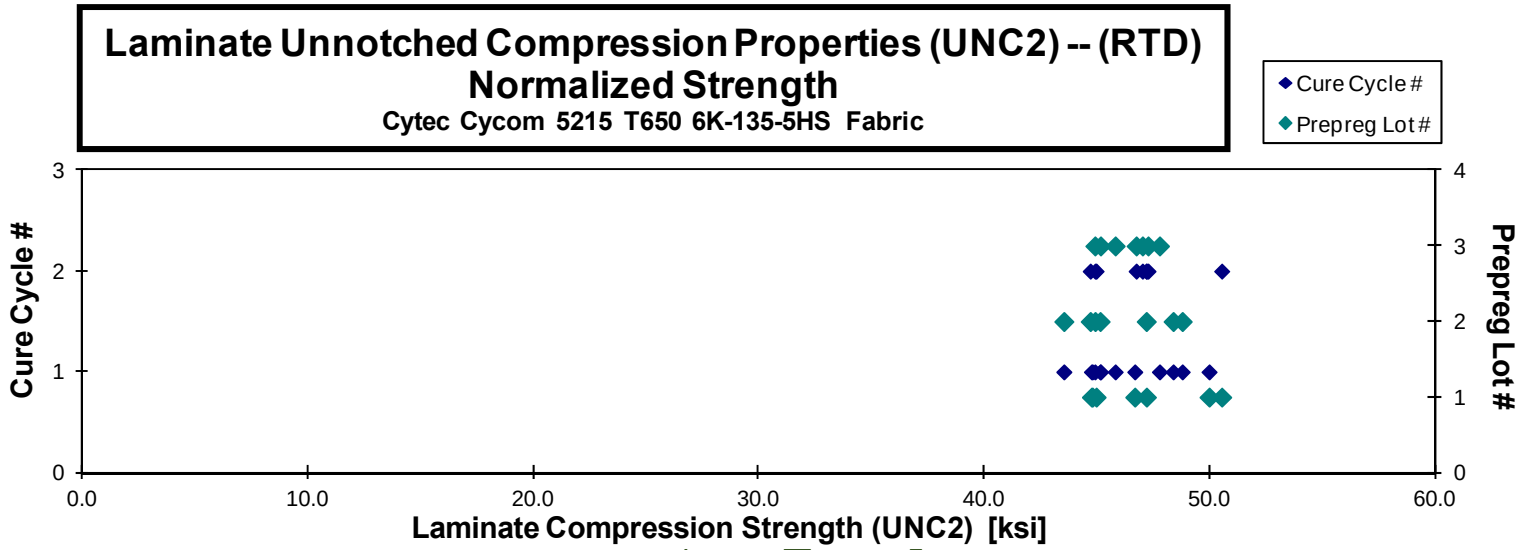
normalizing t_{ply} [in]: 0.0155

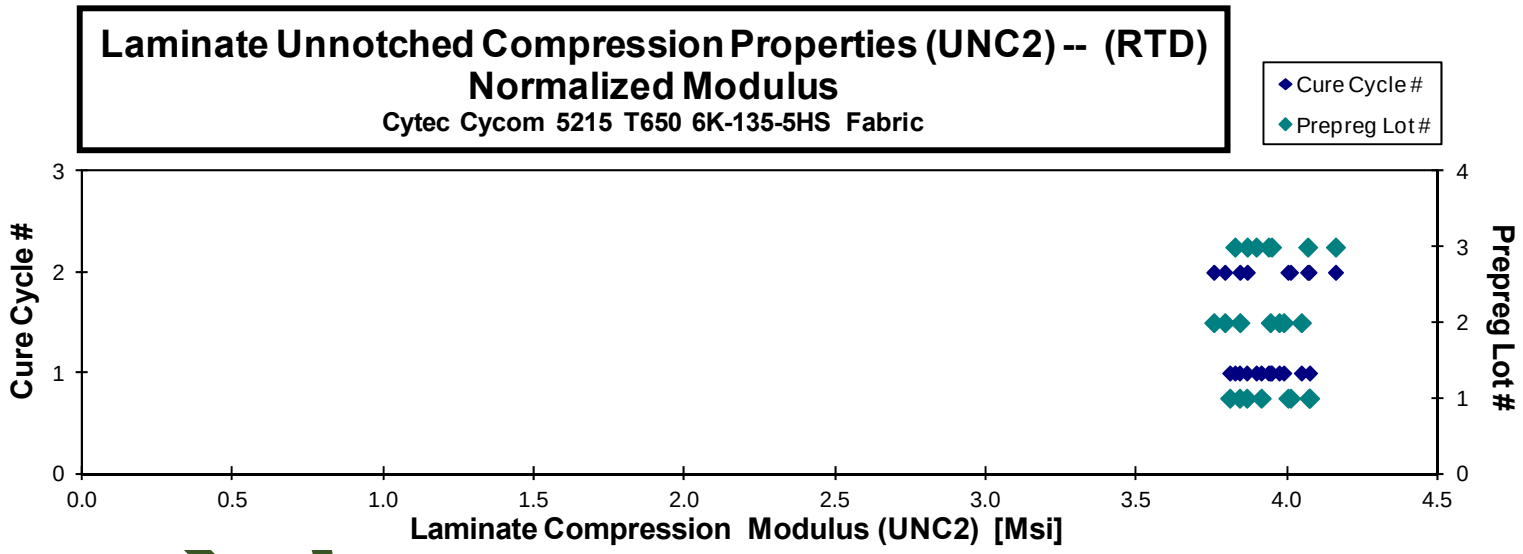
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0EXA111A	A	C1	1	1	46.123	3.955	0.530	0.151	10	BGM	0.0151	44.799	3.842
C0EXA112A	A	C1	1	1	51.218	3.904	0.529	0.151	10	BGM	0.0151	49.973	3.810
C0EXA113A	A	C1	1	1		3.968	0.571	0.153	10	ENDCRUSH	0.0153		3.914
C0EXA114A	A	C1	1	1	46.950	4.098	0.561	0.154	10	BGM	0.0154	46.678	4.075
C0EXA115A	A	C1	1	1	45.149	3.900	0.544	0.154	10	BGM	0.0154	44.755	3.866
C0EXA211A	A	C2	1	2	46.139	4.107	0.570	0.151	10	BGM	0.0151	44.963	4.003
C0EXA212A	A	C2	1	2	47.765	4.122	0.586	0.153	10	BGM	0.0153	47.195	4.073
C0EXA213A	A	C2	1	2	50.890	4.040	0.580	0.154	10	BGM	0.0154	50.534	4.011
C0EXB111A	B	C1	2	1	45.979	4.123	0.569	0.152	10	BGM	0.0152	45.139	4.047
C0EXB112A	B	C1	2	1	49.194	4.011	0.563	0.152	10	BGM	0.0152	48.380	3.944
C0EXB113A	B	C1	2	1	43.947	4.011	0.546	0.154	10	BGM	0.0154	43.531	3.974
C0EXB114A	B	C1	2	1	48.907	3.999	0.542	0.155	10	BGM	0.0155	48.781	3.989
C0EXB211A	B	C2	2	2	46.659	3.921	0.523	0.149	10	BGM	0.0149	44.703	3.757
C0EXB212A	B	C2	2	2	46.000	3.885	0.546	0.151	10	BGM	0.0151	44.916	3.793
C0EXB213A	B	C2	2	2	47.778	3.891	0.585	0.153	10	BGM	0.0153	47.188	3.843
C0EXC111A	C	C1	3	1	46.166	3.985	0.533	0.152	10	BGM	0.0152	45.158	3.898
C0EXC112A	C	C1	3	1	48.440	4.004	0.581	0.153	10	BGM	0.0153	47.773	3.948
C0EXC113A	C	C1	3	1	45.180	3.850	0.542	0.154	10	BGM	0.0154	44.908	3.827
C0EXC114A	C	C1	3	1	45.650	3.925	0.559	0.156	10	BGM	0.0156	45.807	3.938
C0EXC211A	C	C2	3	2	47.994	4.131	0.571	0.153	10	BGM	0.0153	47.266	4.068
C0EXC212A	C	C2	3	2	47.168	4.174	0.563	0.155	10	BGM	0.0155	47.016	4.161
C0EXC213A	C	C2	3	2	46.750	3.868	0.532	0.155	10	BGM	0.0155	46.739	3.868

COMPRESSIVE STRENGTH FOR C0EXA 113A IS NOT REPORTED DUE TO UNACCEPTABLE FAILURE MODE.

Average	47.145	3.994	0.556
Standard Dev.	1.837	0.097	0.020
Coeff. of Var. [%]	3.897	2.438	3.578
Min.	43.947	3.850	0.523
Max.	51.218	4.174	0.586
Number of Spec.	21	22	22

$Average_{norm}$	0.0153	46.486	3.939
$Standard\ Dev._{norm}$		1.872	0.107
Coeff. of Var. $[\%]_{norm}$		4.028	2.728
Min.	0.0149	43.531	3.757
Max.	0.0156	50.534	4.161
Number of Spec.		21	22


Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength (UNC2) [ksi]


Laminate Unnotched Compression Properties (UNC2) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Modulus (UNC2) [Msi]

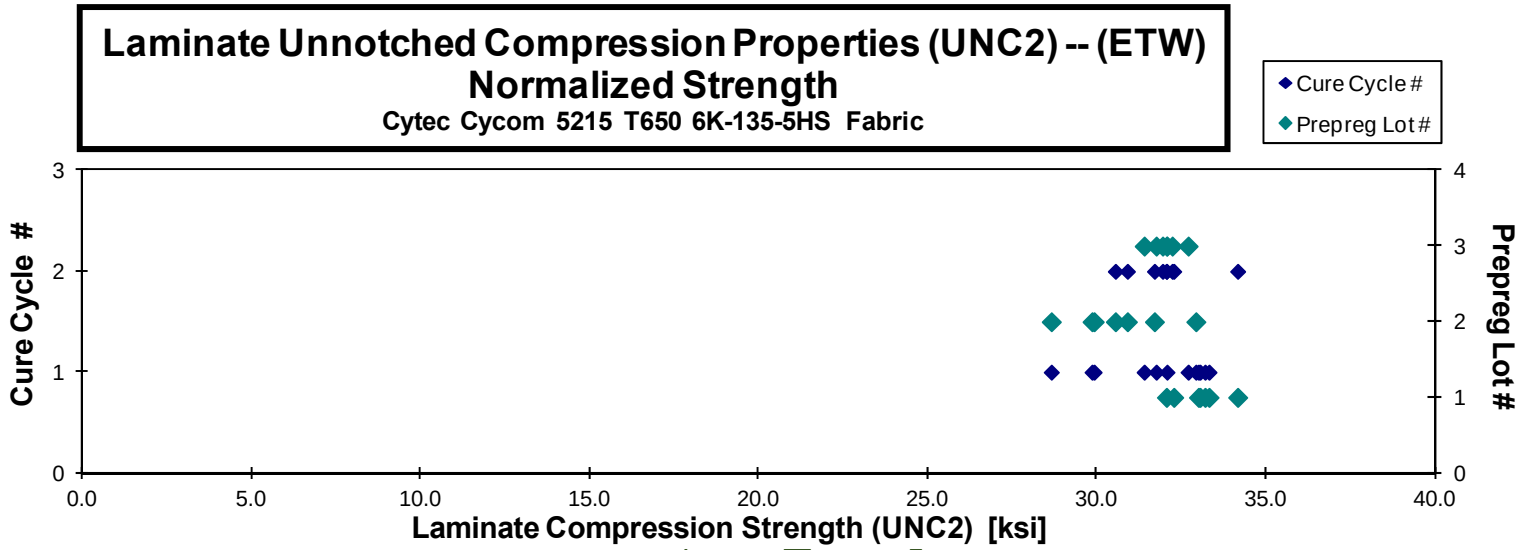
Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

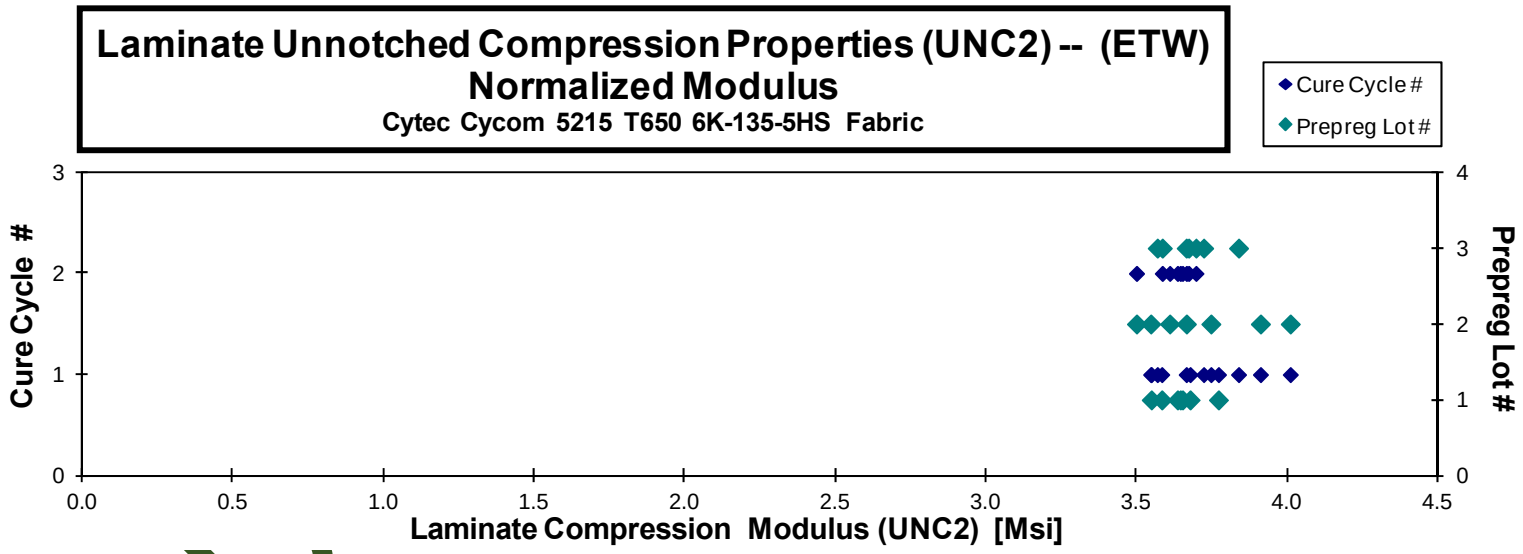
normalizing t_{ply} [in]: 0.0155

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]
C0EXA116M	A	C1	1	1		3.591	0.580	0.155	10	BGM	0.0155		3.584
C0EXA117M	A	C1	1	1		3.791	0.642	0.154	10	BGM	0.0154		3.772
C0EXA118M	A	C1	1	1		3.601	0.625	0.153	10	BGM	0.0153		3.549
C0EXA119M	A	C1	1	1		3.715	0.603	0.153	10	BGM	0.0153		3.678
C0EXA11AM	A	C1	1	1	33.644			0.153	10	BGM	0.0153	33.196	
C0EXA11BM	A	C1	1	1	33.370			0.154	10	BGM	0.0154	33.047	
C0EXA11CM	A	C1	1	1	33.574			0.154	10	BGM	0.0154	33.314	
C0EXA11DM	A	C1	1	1	34.076			0.150	10	BGM	0.0150	33.002	
C0EXA215M	A	C2	1	2		3.671	0.634	0.154	10	BGM	0.0154		3.645
C0EXA216M	A	C2	1	2		3.652	0.590	0.155	10	BGM	0.0155		3.653
C0EXA217M	A	C2	1	2		3.635	0.607	0.155	10	BGM	0.0155		3.636
C0EXA218M	A	C2	1	2	34.139			0.155	10	BGM	0.0155	34.161	
C0EXA219M	A	C2	1	2	32.522			0.154	10	BGM	0.0154	32.271	
C0EXA21AM	A	C2	1	2	32.048			0.155	10	HGM	0.0155	32.055	
C0EXB116M	B	C1	2	1		4.026	0.669	0.154	10	HGM	0.0154		4.011
C0EXB117M	B	C1	2	1		3.540	0.536	0.155	10	BGM	0.0155		3.547
C0EXB118M	B	C1	2	1		3.745	0.583	0.155	10	BGM	0.0155		3.747
C0EXB119M	B	C1	2	1		3.906	0.595	0.155	10	BGM	0.0155		3.912
C0EXB11AM	B	C1	2	1	29.952			0.155	10	BGM	0.0155	29.917	
COEXB11BM	B	C1	2	1	29.955			0.148	10	HGM	0.0148	28.650	
COEXB11CM	B	C1	2	1	30.660			0.151	10	BGM	0.0151	29.855	
COEXB11DM	B	C1	2	1	33.039			0.154	10	BGM	0.0154	32.925	
C0EXB215M	B	C2	2	2		3.634	0.617	0.154	10	BGM	0.0154		3.610
C0EXB216M	B	C2	2	2		3.501	0.590	0.155	10	BGM	0.0155		3.500
C0EXB217M	B	C2	2	2		3.667	0.636	0.155	10	BGM	0.0155		3.666
C0EXB218M	B	C2	2	2	30.960			0.155	10	BGM	0.0155	30.900	
C0EXB219M	B	C2	2	2	31.803			0.155	10	BGM	0.0155	31.700	
C0EXB21AM	B	C2	2	2	30.697			0.154	10	BGM	0.0154	30.545	
C0EXC116M	C	C1	3	1		3.657	0.648	0.155	10	BGM	0.0155		3.665
C0EXC117M	C	C1	3	1		3.716	0.639	0.155	10	BGM	0.0155		3.723
C0EXC118M	C	C1	3	1		3.817	0.664	0.156	10	BGM	0.0156		3.839
C0EXC119M	C	C1	3	1		3.542	0.599	0.156	10	HGM	0.0156		3.569
C0EXC11AM	C	C1	3	1	32.552			0.156	10	BGM	0.0156	32.696	
C0EXC11BM	C	C1	3	1	32.225			0.151	10	BGM	0.0151	31.397	
C0EXC11CM	C	C1	3	1	32.182			0.153	10	BGM	0.0153	31.753	
C0EXC11DM	C	C1	3	1	32.423			0.153	10	BGM	0.0153	32.071	
C0EXC215M	C	C2	3	2		3.671	0.622	0.155	10	BGM	0.0155		3.673
C0EXC216M	C	C2	3	2		3.554	0.648	0.156	10	BGM	0.0156		3.586
C0EXC217M	C	C2	3	2		3.681	0.616	0.156	10	BGM	0.0156		3.697
C0EXC218M	C	C2	3	2	32.127			0.155	10	BGM	0.0155	32.224	
C0EXC219M	C	C2	3	2	31.762			0.156	10	BGM	0.0156	31.939	
C0EXC21AM	C	C2	3	2	32.067			0.155	10	BGM	0.0155	32.057	

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	32.180	3.682	0.616
Standard Dev.	1.230	0.125	0.032
Coeff. of Var. [%]	3.822	3.409	5.180
Min.	29.952	3.501	0.536
Max.	34.139	4.026	0.669
Number of Spec.	21	21	21

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0154	31.889	3.679
Standard $Dev._{norm}$		1.326	0.125
Coeff. of Var. $[\%]_{norm}$		4.157	3.385
Min.	0.0148	28.650	3.500
Max.	0.0156	34.161	4.011
Number of Spec.		21	21


Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
40.0
Laminate Compression Strength (UNC2) [ksi]


Laminate Unnotched Compression Properties (UNC2) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
Laminate Compression Modulus (UNC2) [Msi]

4.11 "40/20/40" Unnotched Compression 3 Properties (UNC3)

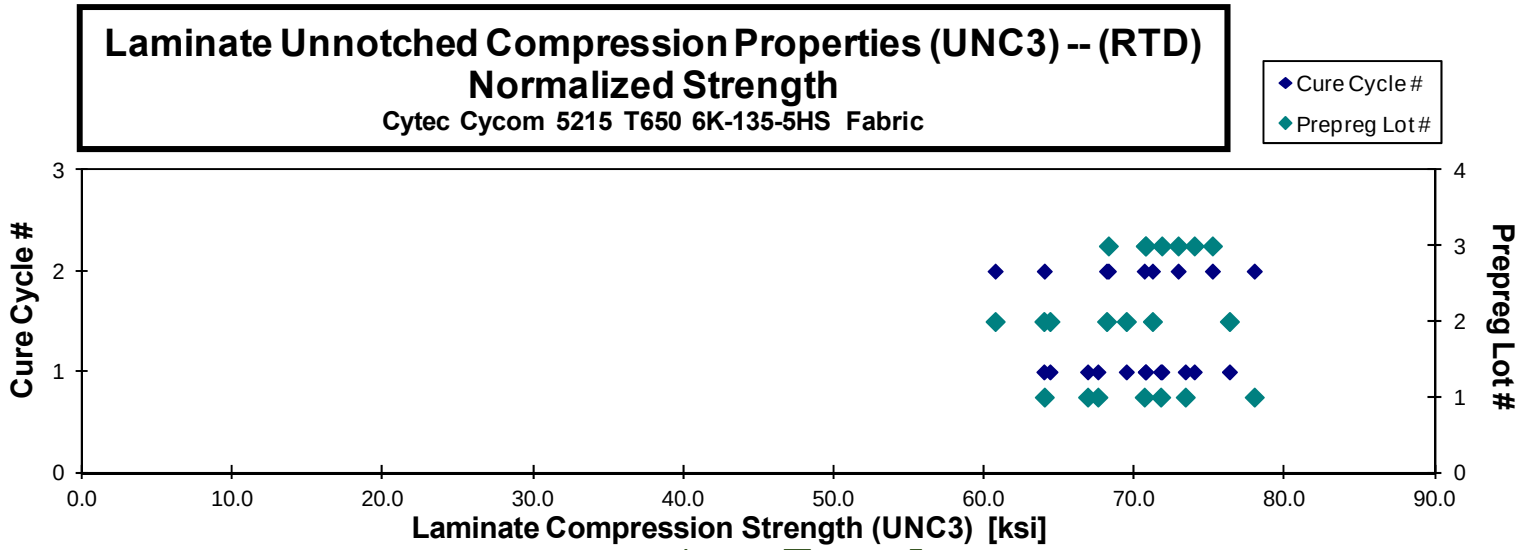
Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

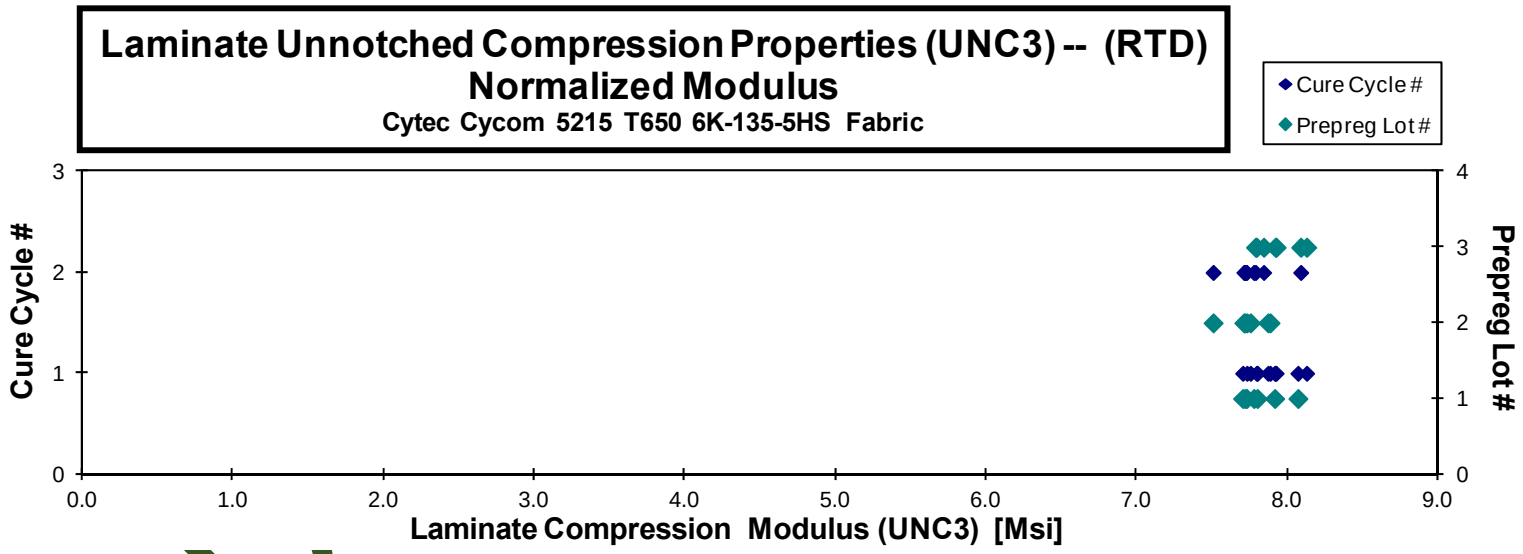
normalizing t_{ply} [in]: 0.0155

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]
C0EYA111A	A	C1	1	1	68.680	8.013	0.136	0.151	10	BGM	0.0151	66.878	7.803
C0EYA112A	A	C1	1	1	74.164	8.003	0.152	0.153	10	BGM	0.0153	73.375	7.917
C0EYA113A	A	C1	1	1	71.825	7.714	0.117	0.155	10	BGM	0.0155	71.740	7.705
C0EYA114A	A	C1	1	1	67.062	8.012	0.141	0.156	10	BGM	0.0156	67.559	8.072
C0EYA211A	A	C2	1	2	66.210	8.048	0.138	0.150	10	HGM / BGM	0.0150	63.995	7.779
C0EYA212A	A	C2	1	2	79.410	7.874	0.124	0.152	10	BGM	0.0152	77.967	7.731
C0EYA213A	A	C2	1	2	71.044	7.764	0.115	0.154	10	BGM	0.0154	70.647	7.720
C0EYB111A	B	C1	2	1	65.501	7.892	0.123	0.152	10	BAB	0.0152	64.375	7.757
C0EYB112A	B	C1	2	1	64.819	7.978	0.140	0.153	10	BGM / HGM	0.0153	63.969	7.873
C0EYB113A	B	C1	2	1	77.058	7.964	0.169	0.154	10	BGM	0.0154	76.313	7.887
C0EYB114A	B	C1	2	1	69.334	7.719	0.129	0.155	10	HAT	0.0155	69.454	7.733
C0EYB211A	B	C2	2	2	74.549	7.863	0.161	0.148	10	BGM	0.0148	71.190	7.509
C0EYB212A	B	C2	2	2	62.562	7.947	0.133	0.150	10	BGM	0.0150	60.726	7.713
C0EYB213A	B	C2	2	2	69.325	7.855	0.126	0.152	10	BGM	0.0152	68.140	7.721
C0EYC111A	C	C1	3	1	72.272	8.096	0.141	0.152	10	BAT	0.0152	70.718	7.922
C0EYC112A	C	C1	3	1	72.584	7.881	0.109	0.153	10	BGM	0.0153	71.811	7.797
C0EYC113A	C	C1	3	1	74.339	8.170	0.142	0.154	10	BGM	0.0154	73.972	8.130
C0EYC114A	C	C1	3	1	70.811	7.936	0.124	0.155	10	BGM	0.0155	70.735	7.927
C0EYC211A	C	C2	3	2	74.824	8.304	0.146	0.151	10	BGM	0.0151	72.901	8.090
C0EYC212A	C	C2	3	2	69.382	7.968	0.147	0.153	10	BGM	0.0153	68.258	7.844
C0EYC213A	C	C2	3	2	76.065	7.882	0.160	0.153	10	BGM / BAT	0.0153	75.182	7.790

Average	**71.037**	**7.947**	**0.137**
Standard Dev.	**4.348**	**0.141**	**0.016**
Coeff. of Var. [%]	**6.121**	**1.768**	**11.518**
Min.	**62.562**	**7.714**	**0.109**
Max.	**79.410**	**8.304**	**0.169**
Number of Spec.	**21**	**21**	**21**

$Average_{norm}$	**0.0153**	**69.995**	**7.830**
$Standard\ Dev._{norm}$		**4.402**	**0.147**
Coeff. of Var. [%]$_{norm}$		**6.289**	**1.881**
Min.	**0.0148**	**60.726**	**7.509**
Max.	**0.0156**	**77.967**	**8.130**
Number of Spec.		**21**	**21**


Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Compression Strength (UNC3) [ksi]


Laminate Unnotched Compression Properties (UNC3) -- (RTD)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
9.0
Laminate Compression Modulus (UNC3) [Msi]

Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Strength & Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric

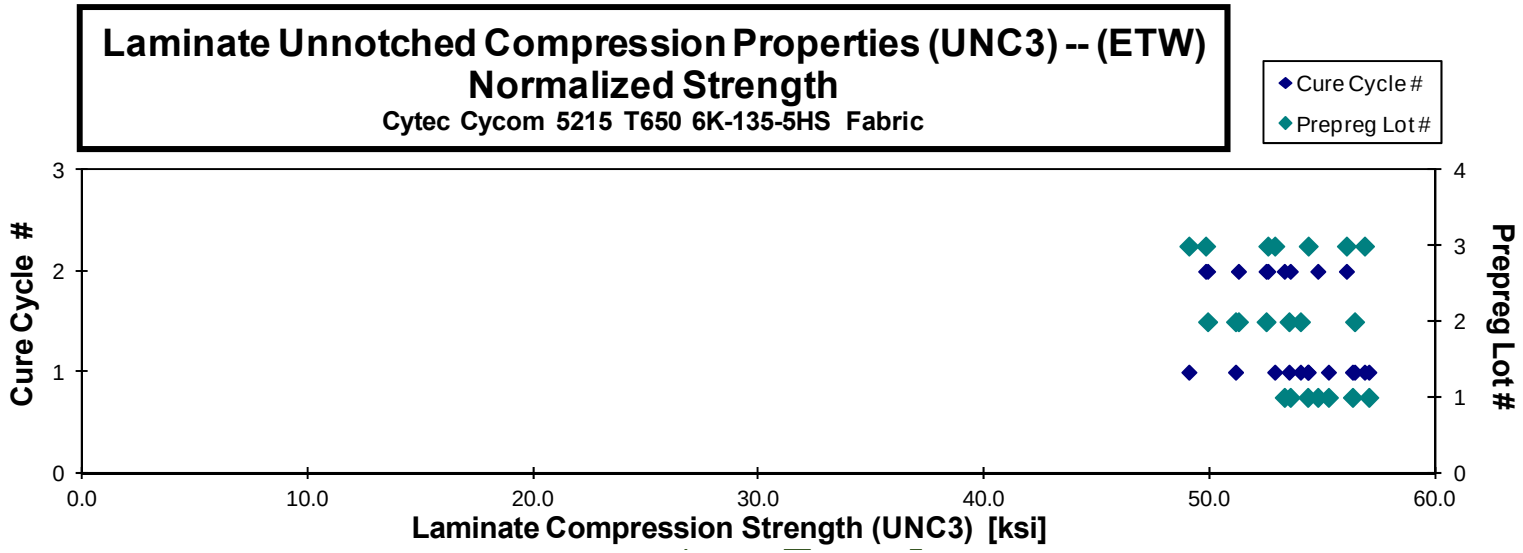
normalizing t_{ply} [in]: 0.0155

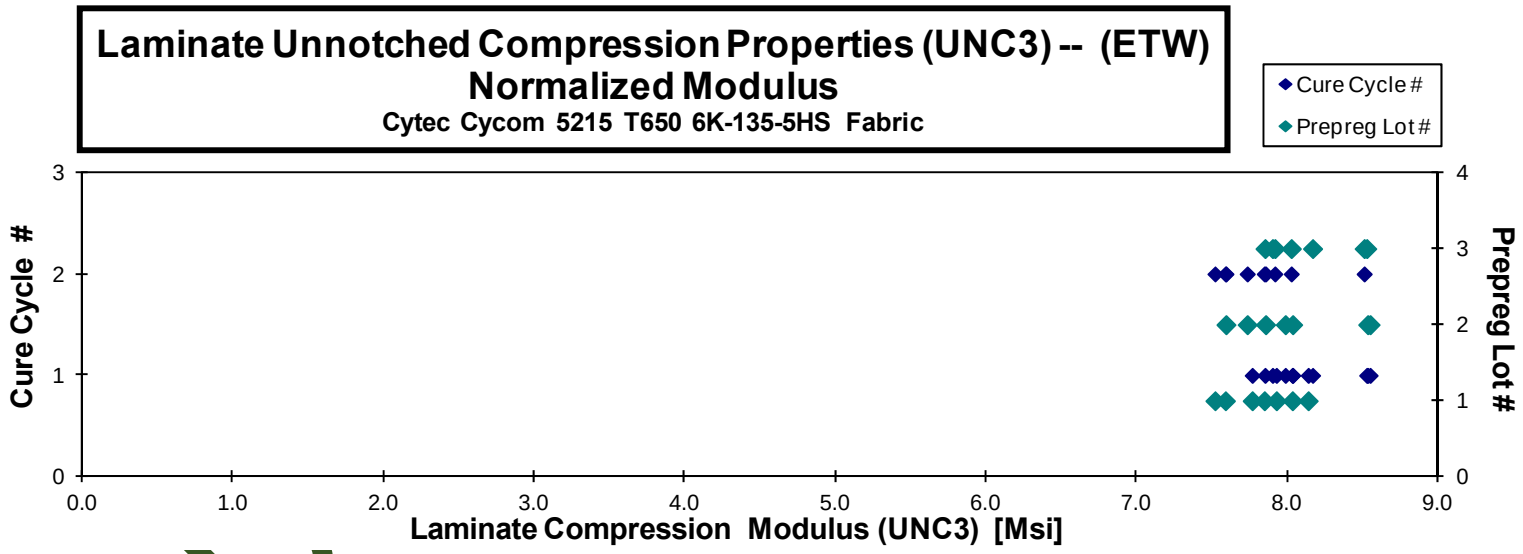
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Modulus [Msi]	Poisson's Ratio	Avg. Specimen Thickn. [in]	# Plies in Laminate	Failure Mode	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
C0EYA116M	A	C1	1	1		7.754	0.148	0.155	10	BGM	0.0155		7.769
C0EYA117M	A	C1	1	1		8.117	0.133	0.155	10	BGM	0.0155		8.140
C0EYA118M	A	C1	1	1		7.873	0.131	0.156	10	BGM	0.0156		7.929
C0EYA119M	A	C1	1	1		7.983	0.124	0.156	10	BGM	0.0156		8.035
C0EYA11AM	A	C1	1	1	55.823			0.156	10	HAT	0.0156	56.333	
C0EYA11BM	A	C1	1	1	56.483			0.157	10	BGM	0.0157	57.059	
C0EYA11DM	A	C1	1	1	55.536			0.152	10	BGM	0.0152	54.347	
C0EYA11EM	A	C1	1	1	55.935			0.153	10	BGM	0.0153	55.267	
C0EYA215M	A	C2	1	2		7.489	0.150	0.156	10	BGM	0.0156		7.521
C0EYA216M	A	C2	1	2		7.547	0.107	0.156	10	BGM	0.0156		7.590
C0EYA217M	A	C2	1	2		7.795	0.099	0.156	10	BGM	0.0156		7.849
C0EYA218M	A	C2	1	2	54.880			0.155	10	BGM	0.0155	54.797	
C0EYA219M	A	C2	1	2	53.539			0.155	10	BGM	0.0155	53.574	
C0EYA21AM	A	C2	1	2	53.229			0.155	10	BGM	0.0155	53.309	
C0EYB116M	B	C1	2	1		8.024	0.108	0.154	10	HGM	0.0154		7.988
C0EYB117M	B	C1	2	1		8.497	0.129	0.156	10	BAB	0.0156		8.551
C0EYB118M	B	C1	2	1		8.072	0.166	0.154	10	HGM	0.0154		8.037
C0EYB119M	B	C1	2	1		8.469	0.162	0.156	10	BGM	0.0156		8.536
C0EYB11AM	B	C1	2	1	56.073			0.156	10	HGM	0.0156	56.428	
C0EYB11BM	B	C1	2	1	52.299			0.152	10	HGM	0.0152	51.146	
C0EYB11CM	B	C1	2	1	54.201			0.153	10	BGM	0.0153	53.519	
C0EYB11DM	B	C1	2	1	54.347			0.154	10	HGM	0.0154	54.026	
C0EYB215M	B	C2	2	2		7.968	0.139	0.153	10	BGM	0.0153		7.857
C0EYB216M	B	C2	2	2		7.793	0.129	0.154	10	BAB	0.0154		7.735
C0EYB217M	B	C2	2	2		7.692	0.138	0.153	10	HGM	0.0153		7.594
C0EYB218M	B	C2	2	2	50.087			0.154	10	HAT	0.0154	49.909	
C0EYB219M	B	C2	2	2	51.457			0.154	10	HGM	0.0154	51.274	
C0EYB21AM	B	C2	2	2	53.193			0.153	10	BGM	0.0153	52.501	
C0EYC116M	C	C1	3	1		8.185	0.177	0.155	10	END CRUSH	0.0155		8.169
C0EYC117M	C	C1	3	1		7.824	0.126	0.156	10	HAT	0.0156		7.854
C0EYC118M	C	C1	3	1		7.881	0.145	0.155	10	BGM	0.0155		7.903
C0EYC119M	C	C1	3	1		8.489	0.116	0.156	10	BGM	0.0156		8.529
C0EYC11AM	C	C1	3	1	52.453			0.156	10	BAB	0.0156	52.887	
C0EYC11BM	C	C1	3	1	49.899			0.152	10	BAT	0.0152	49.078	
C0EYC11CM	C	C1	3	1	55.070			0.153	10	BGM	0.0153	54.371	
C0EYC11DM	C	C1	3	1	57.201			0.154	10	BAT	0.0154	56.869	
C0EYC215M	C	C2	3	2		7.880	0.127	0.156	10	HGM	0.0156		7.919
C0EYC216M	C	C2	3	2		8.047		0.155	10	BAB	0.0155		8.028
C0EYC217M	C	C2	3	2		8.486	0.122	0.155	10	BGM	0.0155		8.512
C0EYC218M	C	C2	3	2	52.237			0.156	10	HGM	0.0156	52.580	
C0EYC219M	C	C2	3	2	49.672			0.155	10	BAT	0.0155	49.822	
C0EYC21AM	C	C2	3	2	56.041			0.155	10	BGM	0.0155	56.065	

Poisson's ratio for C0EYC 216M is not reported due to non linear data.

	Strength [ksi]	Modulus [Msi]	Poisson's Ratio
Average	53.793	7.994	0.134
Standard Dev.	2.266	0.298	0.020
Coeff. of Var. [%]	4.212	3.733	14.995
Min.	49.672	7.489	0.099
Max.	57.201	8.497	0.177
Number of Spec.	21	21	20

	Avg. t_{ply} [in]	$Strength_{norm}$ [ksi]	$Modulus_{norm}$ [Msi]
$Average_{norm}$	0.0155	53.579	8.002
$Standard\ Dev._{norm}$		2.370	0.313
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.424	3.908
Min.	0.0152	49.078	7.521
Max.	0.0157	57.059	8.551
Number of Spec.		21	21


Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength (UNC3) [ksi]

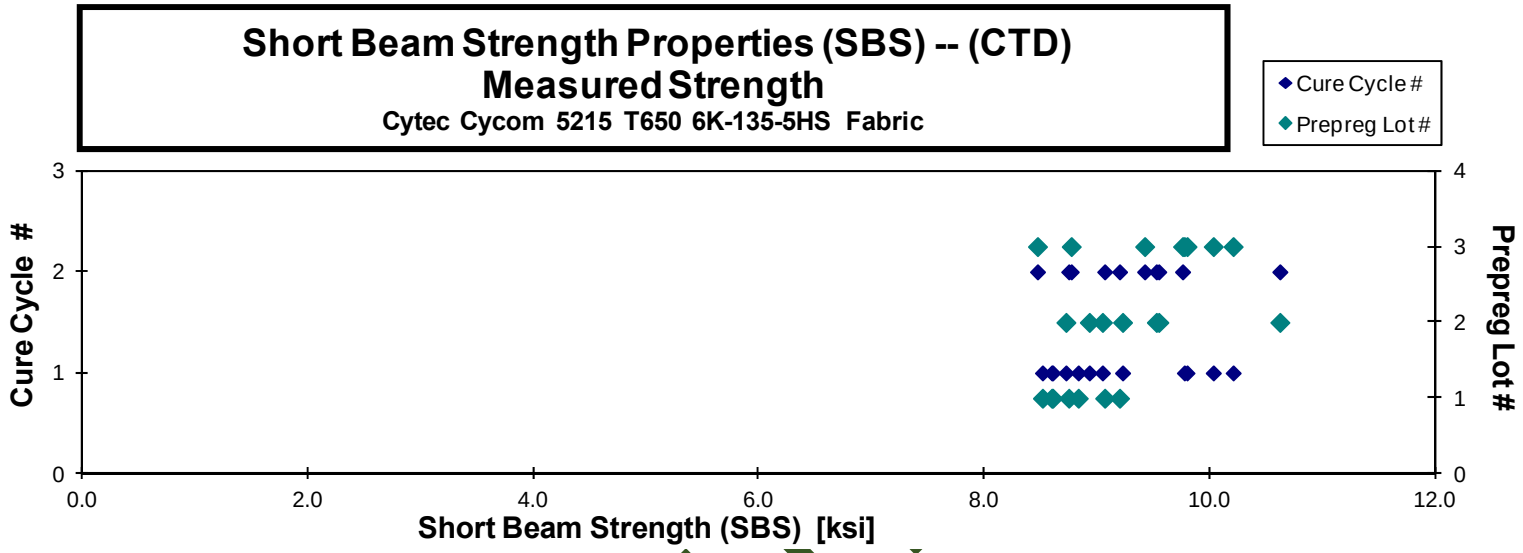

Laminate Unnotched Compression Properties (UNC3) -- (ETW)
Normalized Modulus
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
Laminate Compression Modulus (UNC3) [Msi]

4.12 Lamina Short-Beam Strength Properties (SBS)

Short Beam Strength Properties (SBS) -- (CTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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
C0EQA11AB	A	C1	1	1	8.834	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQA11BB	A	C1	1	1	8.607	0.265	17	0.0156	INTERLAMINAR SHEAR
C0EQA11CB	A	C1	1	1	8.599	0.264	17	0.0155	INTERLAMINAR SHEAR
C0EQA11DB	A	C1	1	1	8.517	0.265	17	0.0156	INTERLAMINAR SHEAR
C0EQA217B	A	C2	1	2	8.750	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQA218B	A	C2	1	2	9.201	0.261	17	0.0154	INTERLAMINAR SHEAR
C0EQA21AB	A	C2	1	2	9.069	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQB117B	B	C1	2	1	9.049	0.258	17	0.0152	INTERLAMINAR SHEAR
C0EQB118B	B	C1	2	1	8.932	0.254	17	0.0150	INTERLAMINAR SHEAR
C0EQB119B	B	C1	2	1	9.227	0.255	17	0.0150	INTERLAMINAR SHEAR
C0EQB11AB	B	C1	2	1	8.725	0.257	17	0.0151	INTERLAMINAR SHEAR
C0EQB217B	B	C2	2	2	10.623	0.256	17	0.0151	INTERLAMINAR SHEAR
C0EQB218B	B	C2	2	2	9.527	0.254	17	0.0149	INTERLAMINAR SHEAR
C0EQB219B	B	C2	2	2	9.549	0.256	17	0.0151	INTERLAMINAR SHEAR
C0EQC116B	C	C1	3	1	10.208	0.263	17	0.0155	INTERLAMINAR SHEAR
C0EQC117B	C	C1	3	1	9.776	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC118B	C	C1	3	1	9.799	0.263	17	0.0155	INTERLAMINAR SHEAR
C0EQC119B	C	C1	3	1	10.032	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC216B	C	C2	3	2	9.423	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC218B	C	C2	3	2	9.760	0.259	17	0.0153	INTERLAMINAR SHEAR
C0EQC219B	C	C2	3	2	8.772	0.257	17	0.0151	INTERLAMINAR SHEAR
C0EQC21AB	C	C2	3	2	8.472	0.257	17	0.0151	INTERLAMINAR SHEAR

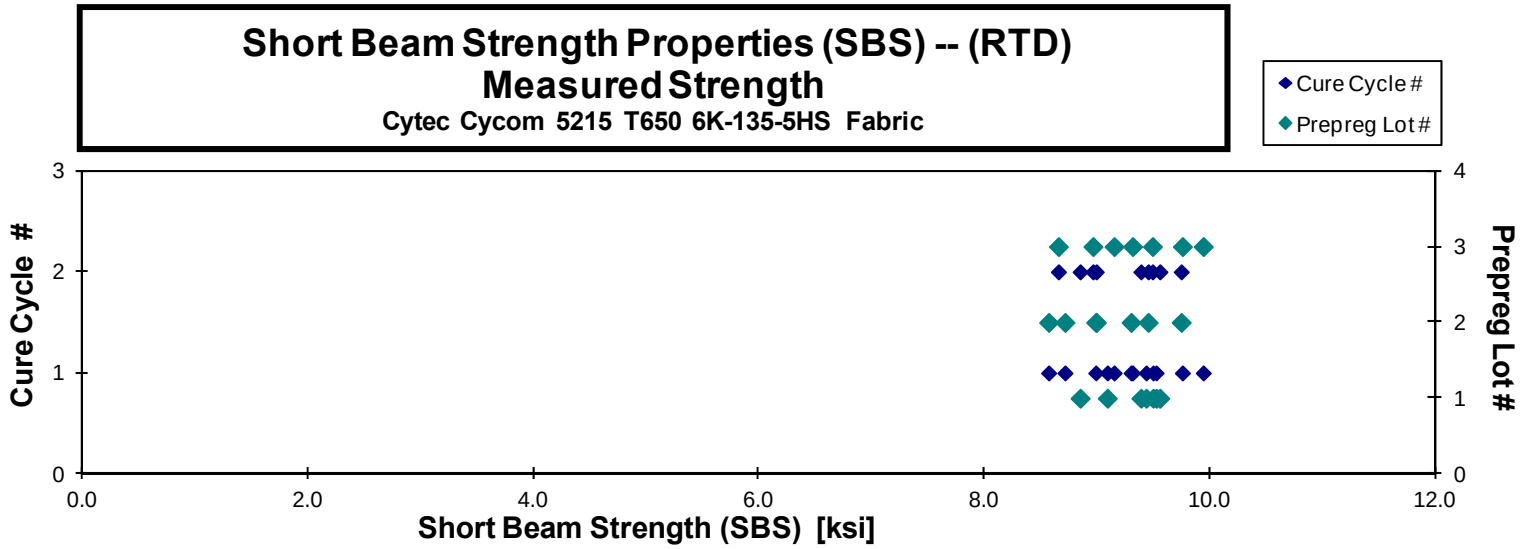
Average	**9.248**	**Average**	**0.0153**
Standard Dev.	**0.599**	**Standard Dev.**	
Coeff. of Var. [%]	**6.476**	**Coeff. of Var. [%]**	
Min.	**8.472**	**Min.**	**0.0149**
Max.	**10.623**	**Max.**	**0.0156**
Number of Spec.	**22**	**Number of Spec.**	**22**



Short Beam Strength Properties (SBS) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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
C0EQA112A	A	C1	1	1	9.525	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQA114A	A	C1	1	1	9.436	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQA115A	A	C1	1	1	9.092	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQA116A	A	C1	1	1	9.498	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQA211A	A	C2	1	2	9.390	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQA212A	A	C2	1	2	8.851	0.263	17	0.0155	INTERLAMINAR SHEAR
C0EQA213A	A	C2	1	2	9.558	0.264	17	0.0155	INTERLAMINAR SHEAR
C0EQB112A	B	C1	2	1	8.990	0.257	17	0.0151	INTERLAMINAR SHEAR
C0EQB113A	B	C1	2	1	9.303	0.261	17	0.0153	INTERLAMINAR SHEAR
C0EQB114A	B	C1	2	1	8.716	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQB115A	B	C1	2	1	8.571	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQB212A	B	C2	2	2	8.994	0.255	17	0.0150	INTERLAMINAR SHEAR
C0EQB213A	B	C2	2	2	9.748	0.256	17	0.0151	INTERLAMINAR SHEAR
C0EQB214A	B	C2	2	2	9.455	0.256	17	0.0150	INTERLAMINAR SHEAR
C0EQC111A	C	C1	3	1	9.758	0.256	17	0.0151	INTERLAMINAR SHEAR
C0EQC112A	C	C1	3	1	9.943	0.257	17	0.0151	INTERLAMINAR SHEAR
C0EQC113A	C	C1	3	1	9.152	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQC114A	C	C1	3	1	9.316	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC211A	C	C2	3	2	8.965	0.259	17	0.0152	INTERLAMINAR SHEAR
C0EQC212A	C	C2	3	2	8.658	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQC213A	C	C2	3	2	9.492	0.262	17	0.0154	INTERLAMINAR SHEAR

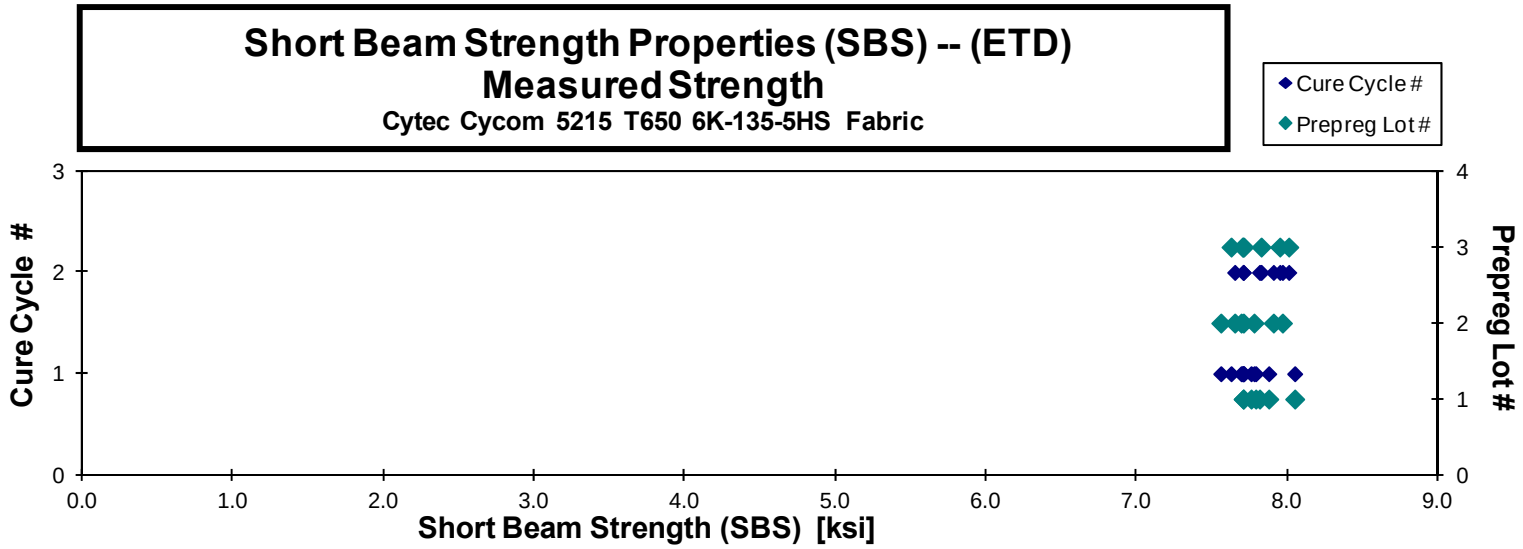
Average	**9.258**	**Average**	**0.0153**
Standard Dev.	**0.380**	**Standard Dev.**	
Coeff. of Var. [%]	**4.102**	**Coeff. of Var. [%]**	
Min.	**8.571**	**Min.**	**0.0150**
Max.	**9.943**	**Max.**	**0.0155**
Number of Spec.	**21**	**Number of Spec.**	**21**


Short Beam Strength Properties (SBS) -- (RTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Short Beam Strength (SBS) [ksi]
0
1
2
3
4
0.0
2.0
4.0
6.0
8.0
10.0
12.0

Short Beam Strength Properties (SBS) -- (ETD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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
C0EQA11FL	A	C1	1	1	8.051	0.263	17	0.0155	INTERLAMINAR SHEAR
C0EQA11GL	A	C1	1	1	7.761	0.263	17	0.0154	INTERLAMINAR SHEAR
C0EQA11HL	A	C1	1	1	7.878	0.263	17	0.0155	INTERLAMINAR SHEAR
C0EQA11KL	A	C1	1	1	7.792	0.263	17	0.0154	INTERLAMINAR SHEAR
C0EQA21CL	A	C2	1	2	7.709	0.264	17	0.0155	INTERLAMINAR SHEAR
C0EQA21DL	A	C2	1	2	7.817	0.265	17	0.0156	INTERLAMINAR SHEAR
C0EQA21FL	A	C2	1	2	7.709	0.264	17	0.0155	INTERLAMINAR SHEAR
C0EQB11BL	B	C1	2	1	7.695	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQB11CL	B	C1	2	1	7.560	0.261	17	0.0154	INTERLAMINAR SHEAR
C0EQB11DL	B	C1	2	1	7.780	0.261	17	0.0154	INTERLAMINAR SHEAR
C0EQB11EL	B	C1	2	1	7.710	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQB21BL	B	C2	2	2	7.969	0.259	17	0.0152	INTERLAMINAR SHEAR
C0EQB21CL	B	C2	2	2	7.652	0.259	17	0.0152	INTERLAMINAR SHEAR
C0EQB21EL	B	C2	2	2	7.909	0.259	17	0.0152	INTERLAMINAR SHEAR
C0EQC11BL	C	C1	3	1	7.704	0.257	17	0.0151	INTERLAMINAR SHEAR
C0EQC11CL	C	C1	3	1	7.628	0.260	17	0.0153	INTERLAMINAR SHEAR
C0EQC11DL	C	C1	3	1	7.712	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC11FL	C	C1	3	1	7.706	0.262	17	0.0154	INTERLAMINAR SHEAR
C0EQC21BL	C	C2	3	2	7.952	0.258	17	0.0152	INTERLAMINAR SHEAR
C0EQC21CL	C	C2	3	2	7.828	0.259	17	0.0152	INTERLAMINAR SHEAR
C0EQC21DL	C	C2	3	2	8.011	0.259	17	0.0152	INTERLAMINAR SHEAR

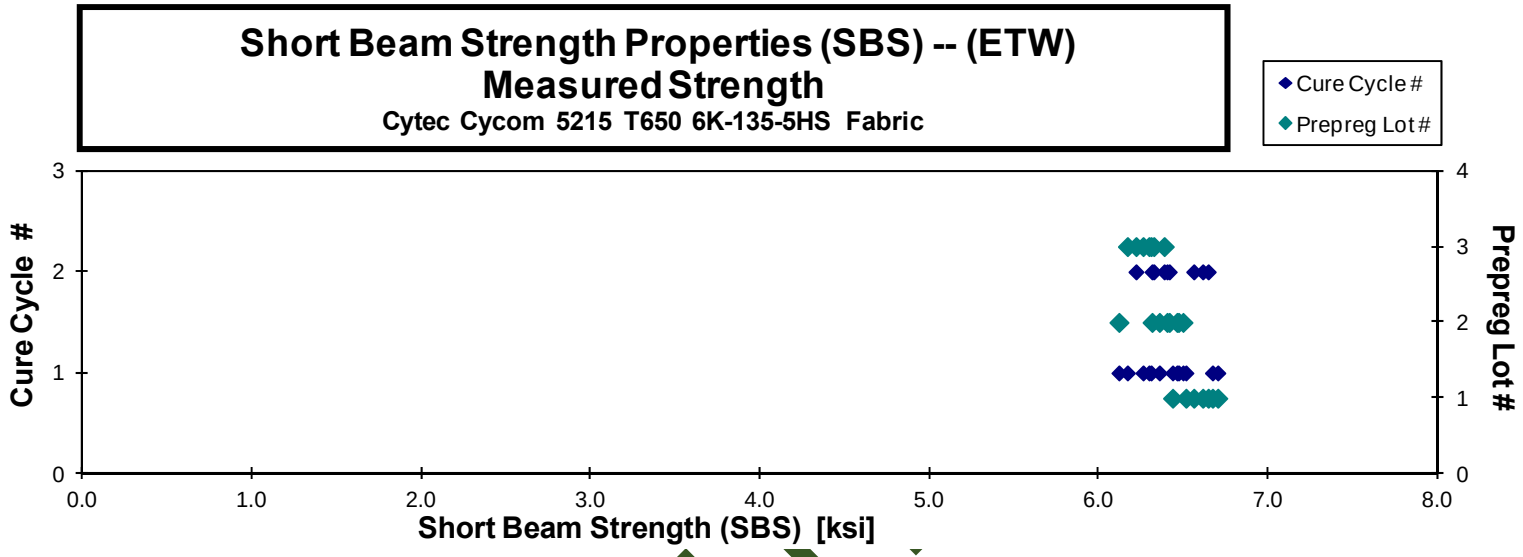
Average	**7.787**	**Average**	**0.0154**
Standard Dev.	**0.132**	**Standard Dev.**	
Coeff. of Var. [%]	**1.693**	**Coeff. of Var. [%]**	
Min.	**7.560**	**Min.**	**0.0151**
Max.	**8.051**	**Max.**	**0.0156**
Number of Spec.	**21**	**Number of Spec.**	**21**



Short Beam Strength Properties (SBS) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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
C0EQA11LM	A	C1	1	1	6.702	0.263	17	0.0155	Interlaminar Shear
C0EQA11MM	A	C1	1	1	6.671	0.263	17	0.0155	Interlaminar Shear
C0EQA11NM	A	C1	1	1	6.514	0.263	17	0.0155	Interlaminar Shear
C0EQA11OM	A	C1	1	1	6.435	0.262	17	0.0154	Interlaminar Shear
C0EQA21GM	A	C2	1	2	6.613	0.262	17	0.0154	Interlaminar Shear
C0EQA21HM	A	C2	1	2	6.645	0.261	17	0.0154	ILS/Compression
C0EQA21IM	A	C2	1	2	6.560	0.259	17	0.0152	Interlaminar Shear
C0EQB11GM	B	C1	2	1	6.461	0.254	17	0.0150	Interlaminar Shear
C0EQB11HM	B	C1	2	1	6.119	0.253	17	0.0149	Interlaminar Shear
C0EQB11IM	B	C1	2	1	6.357	0.256	17	0.0150	Interlaminar Shear
C0EQB11JM	B	C1	2	1	6.470	0.255	17	0.0150	Interlaminar Shear
C0EQB11KM	B	C1	2	1	6.496	0.258	17	0.0152	Interlaminar Shear
C0EQB21GM	B	C2	2	2	6.403	0.257	17	0.0151	ILS/Compression
C0EQB21HM	B	C2	2	2	6.415	0.256	17	0.0151	Interlaminar Shear
C0EQB21IM	B	C2	2	2	6.314	0.258	17	0.0152	Interlaminar Shear
C0EQC11GM	C	C1	3	1	6.169	0.263	17	0.0155	Interlaminar Shear
C0EQC11HM	C	C1	3	1	6.261	0.261	17	0.0154	Interlaminar Shear
C0EQC11JM	C	C1	3	1	6.296	0.258	17	0.0152	Interlaminar Shear
C0EQC11KM	C	C1	3	1	6.308	0.260	17	0.0153	Interlaminar Shear
C0EQC21GM	C	C2	3	2	6.324	0.259	17	0.0152	Interlaminar Shear
C0EQC21HM	C	C2	3	2	6.219	0.257	17	0.0151	Interlaminar Shear
C0EQC21IM	C	C2	3	2	6.386	0.262	17	0.0154	Interlaminar Shear

Average	**6.415**	**Average**	**0.0152**
Standard Dev.	**0.161**	**Standard Dev.**	
Coeff. of Var. [%]	**2.505**	**Coeff. of Var. [%]**	
Min.	**6.119**	**Min.**	**0.0149**
Max.	**6.702**	**Max.**	**0.0155**
Number of Spec.	**22**	**Number of Spec.**	**22**

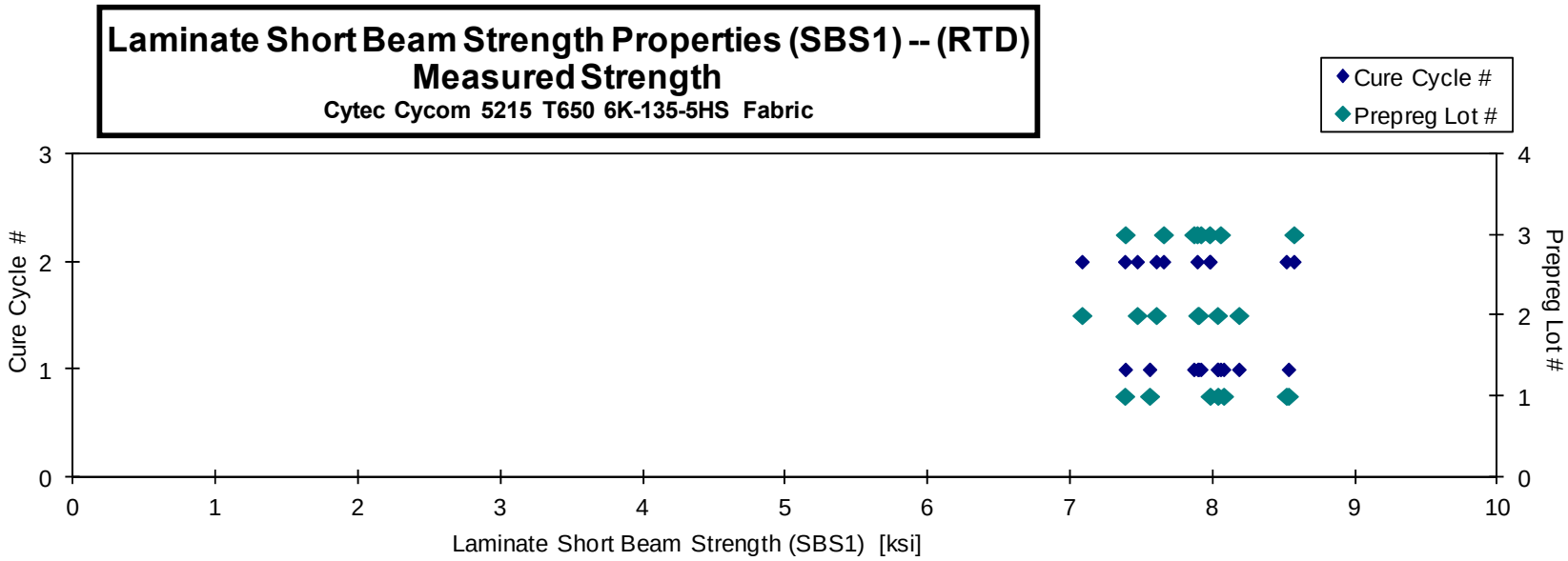

Short Beam Strength Properties (SBS) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Short Beam Strength (SBS) [ksi]
0
1
2
3
4
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0

4.13 Laminate Short-Beam Strength Properties (SBS1)

Laminate Short Beam Strength Properties (SBS1) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. t_{ply} [in]	Failure Mode
C0EqA173A	A	C1	1	1	8.536	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqA174A	A	C1	1	1	8.040	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqA175A	A	C1	1	1	8.081	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqA176A	A	C1	1	1	7.561	0.182	12	0.0152	INTERLAMINAR SHEAR
C0EqA272A	A	C2	1	2	8.521	0.185	12	0.0154	INTERLAMINAR SHEAR
C0EqA273A	A	C2	1	2	7.387	0.185	12	0.0154	INTERLAMINAR SHEAR
C0EqA275A	A	C2	1	2	7.985	0.185	12	0.0154	INTERLAMINAR SHEAR
C0EqB172A	B	C1	2	1	7.905	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqB173A	B	C1	2	1	8.188	0.179	12	0.0149	INTERLAMINAR SHEAR
C0EqB174A	B	C1	2	1	8.038	0.180	12	0.0150	INTERLAMINAR SHEAR
C0EqB175A	B	C1	2	1	7.899	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqB271A	B	C2	2	2	7.086	0.179	12	0.0149	INTERLAMINAR SHEAR
C0EqB272A	B	C2	2	2	7.474	0.180	12	0.0150	INTERLAMINAR SHEAR
C0EqB273A	B	C2	2	2	7.608	0.182	12	0.0152	INTERLAMINAR SHEAR
C0EqC171A	C	C1	3	1	7.391	0.179	12	0.0149	INTERLAMINAR SHEAR
C0EqC172A	C	C1	3	1	7.920	0.179	12	0.0150	INTERLAMINAR SHEAR
C0EqC173A	C	C1	3	1	7.872	0.181	12	0.0150	INTERLAMINAR SHEAR
C0EqC174A	C	C1	3	1	8.059	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqC271A	C	C2	3	2	8.574	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqC272A	C	C2	3	2	7.659	0.180	12	0.0150	INTERLAMINAR SHEAR
C0EqC273A	C	C2	3	2	7.982	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqC274A	C	C2	3	2	7.895	0.180	12	0.0150	INTERLAMINAR SHEAR

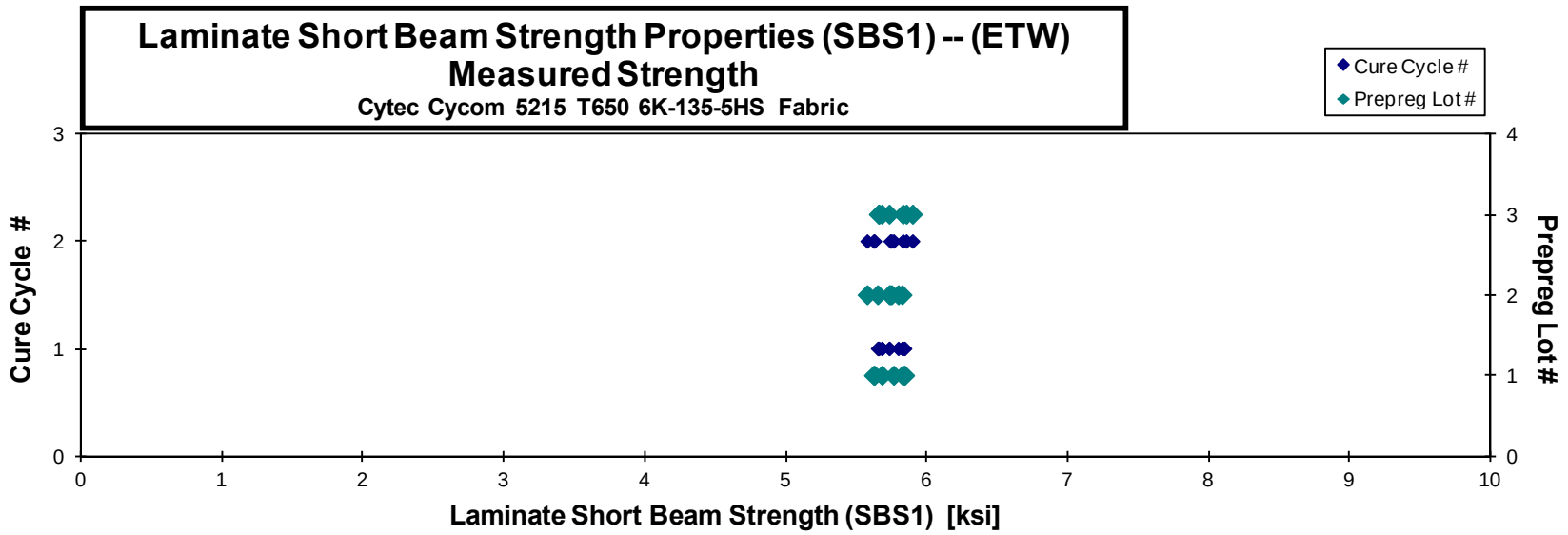
Average	**7.894**	**Average**	**0.0151**
Standard Dev.	**0.382**	**Standard Dev.**	
Coeff. of Var. [%]	**4.839**	**Coeff. of Var. [%]**	
Min.	**7.086**	**Min.**	**0.0149**
Max.	**8.574**	**Max.**	**0.0154**
Number of Spec.	**22**	**Number of Spec.**	**22**


Laminate Short Beam Strength Properties (SBS1) -- (RTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Short Beam Strength (SBS1) [ksi]
0
1
2
3
4
5
6
7
8
9
10

Laminate Short Beam Strength Properties (SBS1) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. t_{ply} [in]	Failure Mode
C0EqA177M	A	C1	1	1	5.848	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqA178M	A	C1	1	1	5.686	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqA179M	A	C1	1	1	5.832	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqA17AM	A	C1	1	1	5.842	0.183	12	0.0153	INTERLAMINAR SHEAR
C0EqA277M	A	C2	1	2	5.769	0.184	12	0.0154	INTERLAMINAR SHEAR
C0EqA278M	A	C2	1	2	5.634	0.184	12	0.0153	INTERLAMINAR SHEAR
C0EqA279M	A	C2	1	2	5.627	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqB176M	B	C1	2	1	5.829	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqB177M	B	C1	2	1	5.656	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqB178M	B	C1	2	1	5.802	0.182	12	0.0152	INTERLAMINAR SHEAR
C0EqB179M	B	C1	2	1	5.738	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqB276M	B	C2	2	2	5.755	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqB277M	B	C2	2	2	5.581	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqB278M	B	C2	2	2	5.746	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqC176M	C	C1	3	1	5.738	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqC177M	C	C1	3	1	5.662	0.181	12	0.0151	INTERLAMINAR SHEAR
C0EqC178M	C	C1	3	1	5.686	0.183	12	0.0152	INTERLAMINAR SHEAR
C0EqC179M	C	C1	3	1	5.665	0.182	12	0.0151	INTERLAMINAR SHEAR
C0EqC276M	C	C2	3	2	5.859	0.179	12	0.0149	INTERLAMINAR SHEAR
C0EqC277M	C	C2	3	2	5.835	0.179	12	0.0149	INTERLAMINAR SHEAR
C0EqC278M	C	C2	3	2	5.903	0.179	12	0.0149	INTERLAMINAR SHEAR

Average	**5.747**	**Average**	**0.0151**
Standard Dev.	**0.091**	**Standard Dev.**	
Coeff. of Var. [%]	**1.586**	**Coeff. of Var. [%]**	
Min.	**5.581**	**Min.**	**0.0149**
Max.	**5.903**	**Max.**	**0.0154**
Number of Spec.	**21**	**Number of Spec.**	**21**


Laminate Short Beam Strength Properties (SBS1) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Short Beam Strength (SBS1) [ksi]
0
1
2
3
4
5
6
7
8
9
10

4.14 "25/50/25" Open-Hole Tension 1 Properties (OHT1)

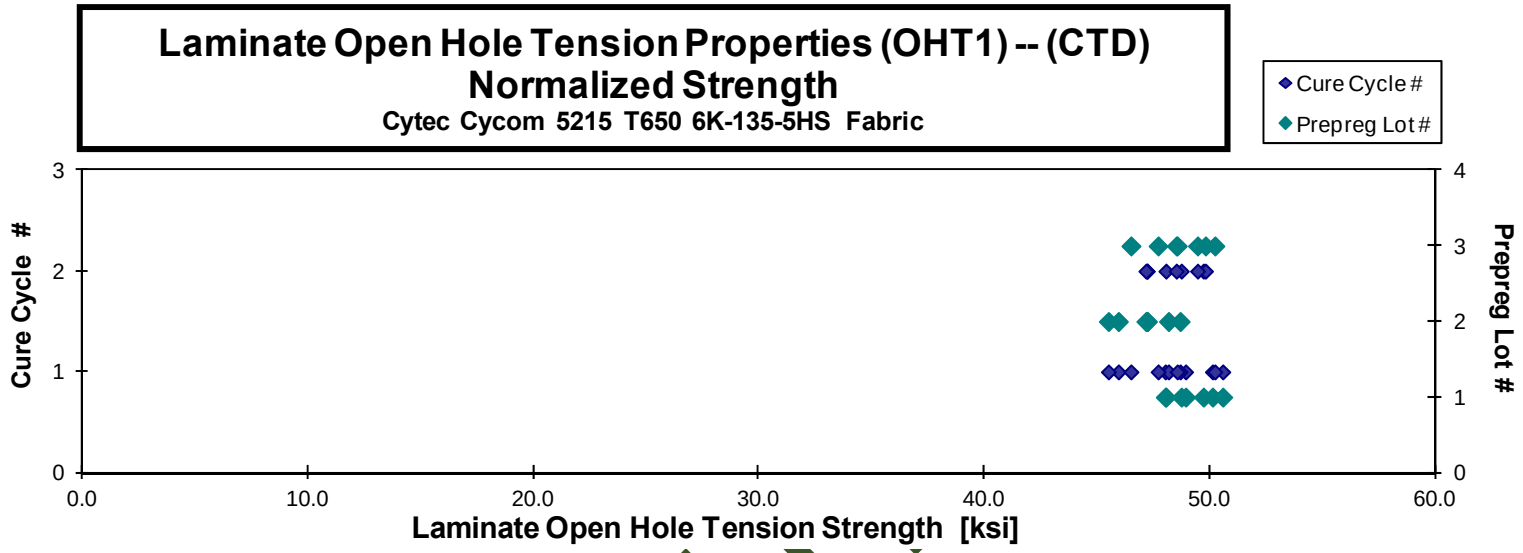
Laminate Open Hole Tension Properties (OHT1) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EDA115B	A	C1	1	1	48.431	0.123	8	LGM	0.0154	48.034
C0EDA116B	A	C1	1	1	50.137	0.124	8	LGM	0.0155	50.123
C0EDA117B	A	C1	1	1	50.903	0.123	8	LGM	0.0154	50.581
C0EDA118B	A	C1	1	1	49.835	0.122	8	LGM	0.0152	48.931
C0EDA215B	A	C2	1	2	49.038	0.123	8	LGM	0.0154	48.741
C0EDA216B	A	C2	1	2	48.176	0.124	8	LGM	0.0155	48.060
C0EDA217B	A	C2	1	2	50.637	0.122	8	LGM	0.0152	49.719
C0EDB115B	B	C1	2	1	46.317	0.123	8	LGM	0.0154	45.949
C0EDB116B	B	C1	2	1	45.941	0.123	8	LGM	0.0154	45.508
C0EDB117B	B	C1	2	1	49.105	0.122	8	LGM	0.0152	48.175
C0EDB118B	B	C1	2	1	49.178	0.123	8	LGM	0.0153	48.689
C0EDB215B	B	C2	2	2	47.387	0.124	8	LGM	0.0154	47.228
C0EDB216B	B	C2	2	2	47.290	0.124	8	LGM	0.0155	47.226
C0EDB217B	B	C2	2	2	47.400	0.123	8	LGM	0.0154	47.171
C0EDC115B	C	C1	3	1	48.178	0.125	8	LGM	0.0156	48.560
C0EDC116B	C	C1	3	1	45.897	0.126	8	LGM	0.0157	46.508
C0EDC117B	C	C1	3	1	50.934	0.122	8	LGM	0.0153	50.229
C0EDC118B	C	C1	3	1	47.946	0.123	8	LGM	0.0154	47.714
C0EDC215B	C	C2	3	2	48.676	0.124	8	LGM	0.0155	48.519
C0EDC216B	C	C2	3	2	50.512	0.122	8	LGM	0.0153	49.812
C0EDC218B	C	C2	3	2	49.040	0.125	8	LGM	0.0156	49.462

Average	48.617	
Standard Dev.	1.556	
Coeff. of Var. [%]	3.201	
Min.	45.897	
Max.	50.934	
Number of Spec.	21	

$Average_{norm}$	0.0154	48.330
$Standard\ Dev._{norm}$		1.402
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.902
Min.	0.0152	45.508
Max.	0.0157	50.581
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT1) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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

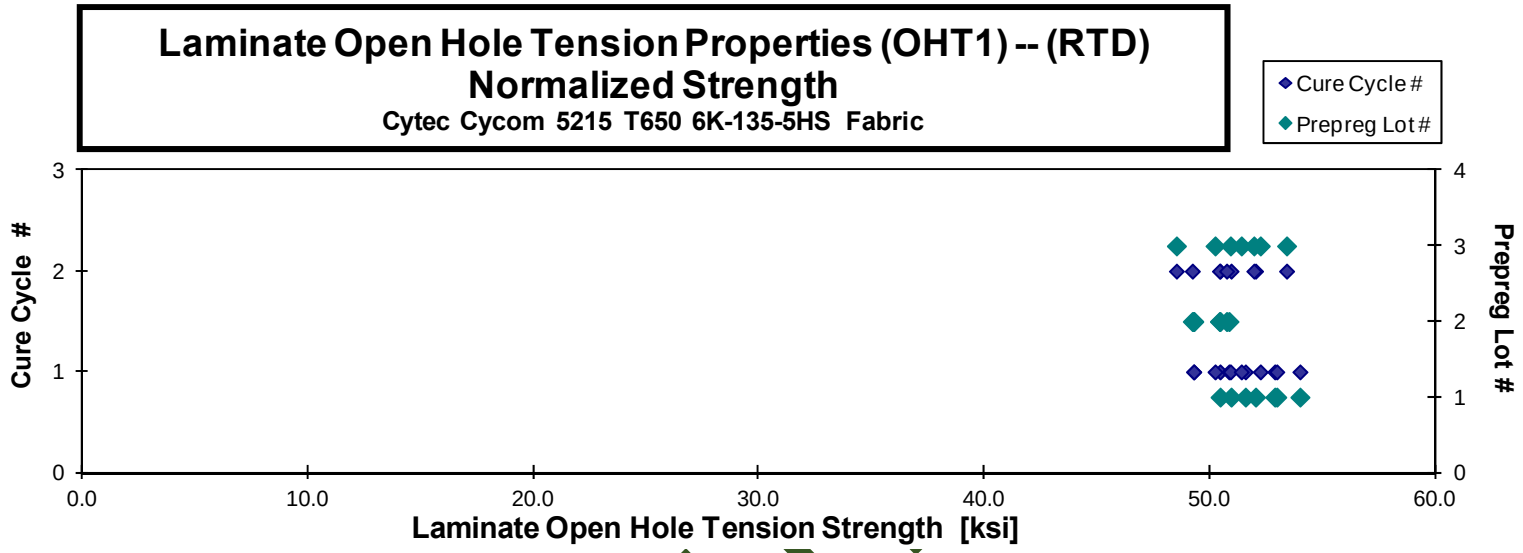
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EDA111A	A	C1	1	1	52.725	0.121	8	LGM	0.0152	51.584
C0EDA112A	A	C1	1	1	53.515	0.123	8	LGM	0.0153	52.889
C0EDA113A	A	C1	1	1	53.961	0.124	8	LGM	0.0155	54.004
C0EDA114A	A	C1	1	1	53.444	0.123	8	LGM	0.0154	52.977
C0EDA211A	A	C2	1	2	53.356	0.121	8	LGM	0.0151	52.036
C0EDA212A	A	C2	1	2	51.046	0.124	8	LGM	0.0155	50.950
C0EDA213A	A	C2	1	2	51.088	0.122	8	LGM	0.0153	50.463
C0EDB111A	B	C1	2	1	50.084	0.122	8	LGM	0.0153	49.289
C0EDB112A	B	C1	2	1	50.952	0.123	8	LGM	0.0154	50.459
C0EDB113A	B	C1	2	1	49.930	0.122	8	LGM	0.0153	49.292
C0EDB114A	B	C1	2	1	51.423	0.123	8	LGM	0.0153	50.856
C0EDB211A	B	C2	2	2	51.016	0.123	8	LGM	0.0153	50.434
C0EDB212A	B	C2	2	2	50.819	0.124	8	LGM	0.0155	50.751
C0EDB213A	B	C2	2	2	49.232	0.124	8	LGM	0.0155	49.232
C0EDC111A	C	C1	3	1	53.159	0.122	8	LGM	0.0152	52.245
C0EDC112A	C	C1	3	1	49.902	0.125	8	LGM	0.0156	50.237
C0EDC113A	C	C1	3	1	51.187	0.123	8	LGM	0.0154	50.919
C0EDC114A	C	C1	3	1	51.223	0.124	8	LGM	0.0156	51.402
C0EDC211A	C	C2	3	2	48.590	0.124	8	LGM	0.0155	48.525
C0EDC212A	C	C2	3	2	53.282	0.124	8	LGM	0.0155	53.411
C0EDC213A	C	C2	3	2	51.869	0.124	8	LGM	0.0155	51.960

Average	51.514	
Standard Dev.	1.534	
Coeff. of Var. [%]	2.979	
Min.	48.590	
Max.	53.961	
Number of Spec.	21	

$Average_{norm}$	0.0154	51.139
$Standard\ Dev._{norm}$		1.460
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.855
Min.	0.0151	48.525
Max.	0.0156	54.004
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

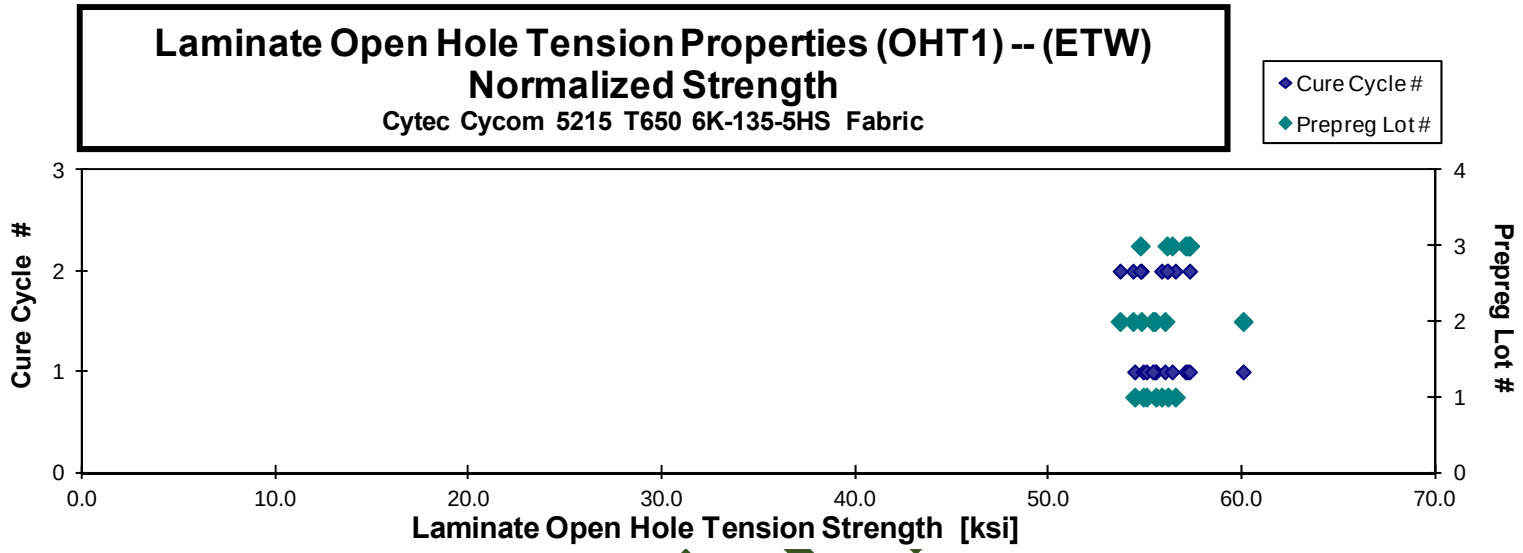
Laminate Open Hole Tension Properties (OHT1) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EDA11AM	A	C1	1	1	54.695	0.123	8	MGM	0.0154	54.452
C0EDA11BM	A	C1	1	1	55.103	0.125	8	MGM	0.0156	55.547
C0EDA11CM	A	C1	1	1	54.476	0.125	8	MGM	0.0156	54.893
C0EDA11DM	A	C1	1	1	54.878	0.124	8	MGM	0.0156	55.062
C0EDA219M	A	C2	1	2	56.336	0.123	8	MGM	0.0154	55.844
C0EDA21AM	A	C2	1	2	56.491	0.123	8	MGM	0.0154	56.172
C0EDA21BM	A	C2	1	2	56.323	0.125	8	MGM	0.0156	56.557
C0EDB119M	B	C1	2	1	60.116	0.124	8	LGM	0.0155	60.067
C0EDB11AM	B	C1	2	1	56.107	0.123	8	MGM	0.0153	55.497
C0EDB11BM	B	C1	2	1	56.384	0.123	8	MGM	0.0154	56.016
C0EDB11CM	B	C1	2	1	56.040	0.123	8	MGM	0.0153	55.392
C0EDB219M	B	C2	2	2	55.116	0.122	8	MGM	0.0153	54.368
C0EDB21AM	B	C2	2	2	53.639	0.124	8	MGM	0.0155	53.697
C0EDB21BM	B	C2	2	2	55.107	0.123	8	MGM	0.0154	54.796
C0EDC119M	C	C1	3	1	56.648	0.125	8	MGM	0.0156	57.082
C0EDC11AM	C	C1	3	1	57.131	0.124	8	MGM	0.0155	57.185
C0EDC11BM	C	C1	3	1	57.118	0.124	8	MGM	0.0155	57.287
C0EDC11CM	C	C1	3	1	56.184	0.124	8	MGM	0.0156	56.388
C0EDC219M	C	C2	3	2	56.035	0.124	8	MGM	0.0155	56.118
C0EDC21AM	C	C2	3	2	54.845	0.124	8	MGM	0.0155	54.742
C0EDC21BM	C	C2	3	2	56.952	0.125	8	MGM	0.0156	57.297

Average	55.984	
Standard Dev.	1.341	
Coeff. of Var. [%]	2.396	
Min.	53.639	
Max.	60.116	
Number of Spec.	21	

$Average_{norm}$	0.01548	55.927
$Standard\ Dev._{norm}$		1.400
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.503
Min.	0.0153	53.697
Max.	0.0156	60.067
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT1) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.15 "10/80/10" Open-Hole Tension 2 Properties (OHT2)

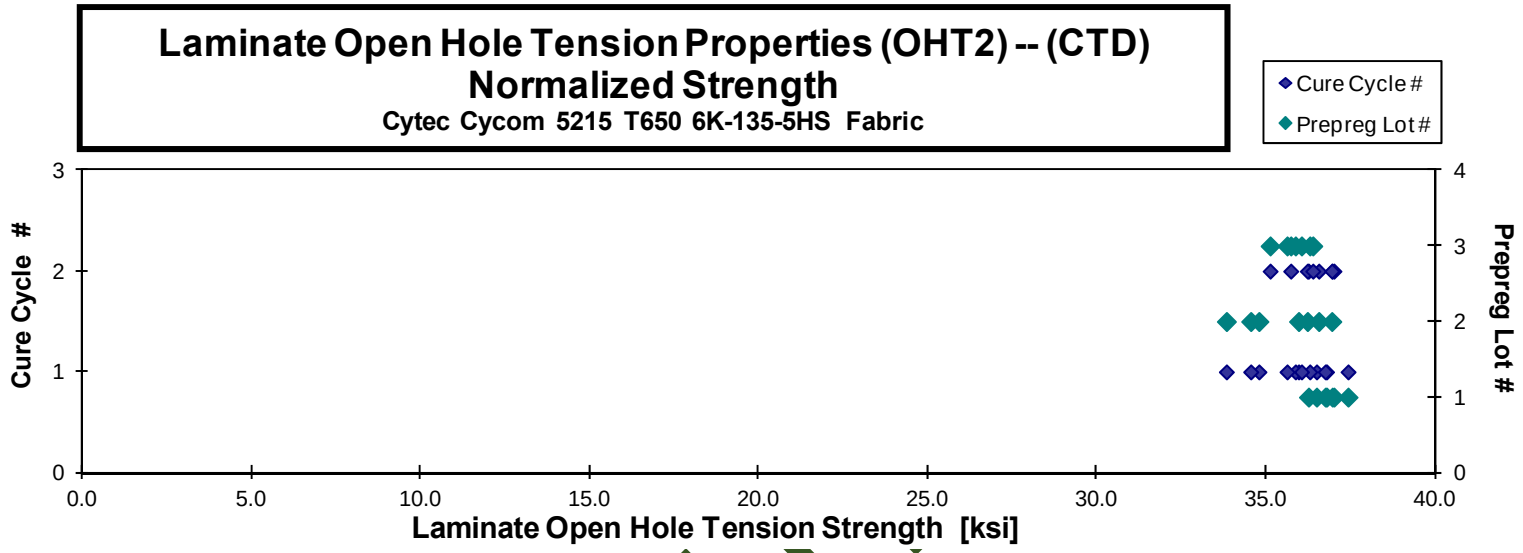
Laminate Open Hole Tension Properties (OHT2) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EEA116B	A	C1	1	1	36.569	0.156	10	LGM	0.0156	36.790
C0EEA117B	A	C1	1	1	36.294	0.156	10	AGM	0.0156	36.493
C0EEA118B	A	C1	1	1	37.673	0.151	10	AGM	0.0151	36.753
C0EEA119B	A	C1	1	1	37.628	0.154	10	AGM	0.0154	37.426
C0EEA214B	A	C2	1	2	36.905	0.155	10	AGM	0.0155	37.008
C0EEA215B	A	C2	1	2	36.966	0.155	10	AGM	0.0155	36.958
C0EEA216B	A	C2	1	2	36.514	0.154	10	AGM	0.0154	36.255
C0EEB115B	B	C1	2	1	35.328	0.153	10	AGM	0.0153	34.789
C0EEB116B	B	C1	2	1	34.869	0.154	10	AGM	0.0154	34.547
C0EEB117B	B	C1	2	1	34.993	0.150	10	AGM	0.0150	33.827
C0EEB118B	B	C1	2	1	36.984	0.151	10	AGM	0.0151	35.962
C0EEB214B	B	C2	2	2	36.321	0.156	10	AGM	0.0156	36.559
C0EEB215B	B	C2	2	2	37.156	0.154	10	AGM	0.0154	36.944
C0EEB216B	B	C2	2	2	36.478	0.154	10	AGM	0.0154	36.223
C0EEC115B	C	C1	3	1	35.703	0.156	10	AGM	0.0156	35.868
C0EEC116B	C	C1	3	1	35.442	0.156	10	AGM	0.0156	35.621
C0EEC117B	C	C1	3	1	35.838	0.157	10	AGM	0.0157	36.293
C0EEC118B	C	C1	3	1	35.549	0.157	10	AGM	0.0157	36.049
C0EEC214B	C	C2	3	2	34.601	0.157	10	AGM	0.0157	35.121
C0EEC215B	C	C2	3	2	35.900	0.157	10	AGM	0.0157	36.383
C0EEC216B	C	C2	3	2	35.750	0.155	10	AGM	0.0155	35.731

Average	36.165	
Standard Dev.	0.876	
Coeff. of Var. [%]	2.422	
Min.	34.601	
Max.	37.673	
Number of Spec.	21	

$Average_{norm}$	0.0155	36.076
$Standard\ Dev._{norm}$		0.898
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.490
Min.	0.0150	33.827
Max.	0.0157	37.426
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT2) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

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

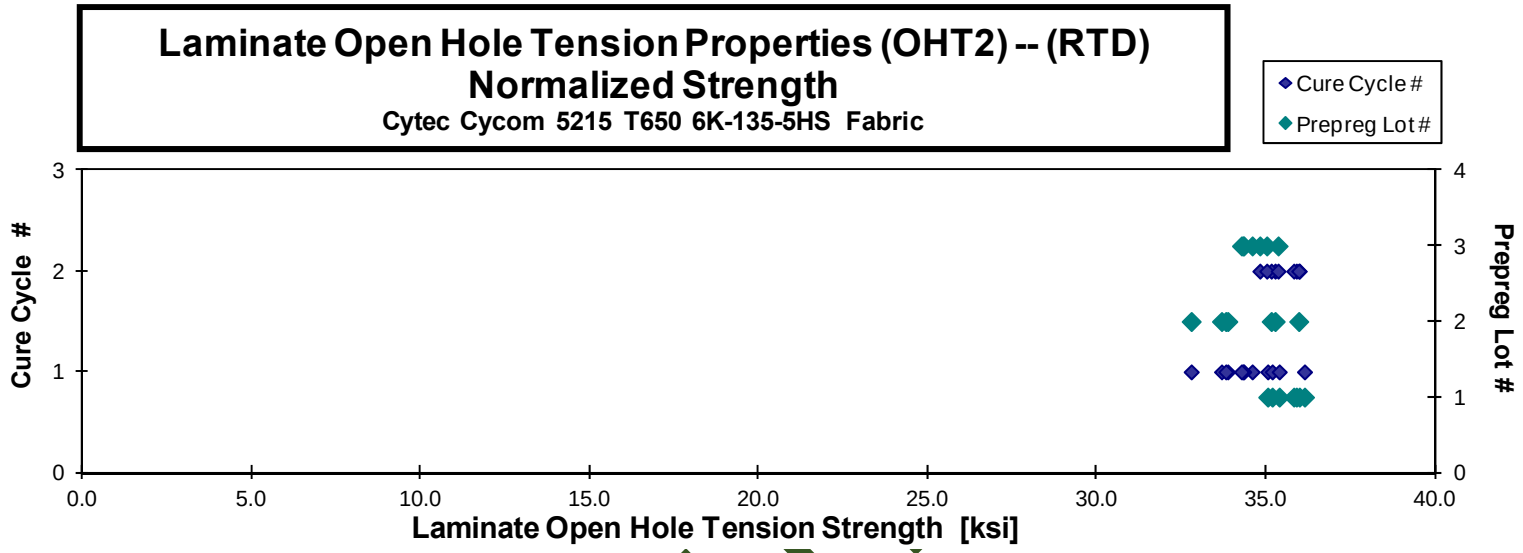
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EEA111A	A	C1	1	1	36.219	0.150	10	AGM	0.0150	35.051
C0EEA112A	A	C1	1	1	35.504	0.154	10	AGM	0.0154	35.183
C0EEA113A	A	C1	1	1	36.266	0.154	10	AGM	0.0154	36.137
C0EEA114A	A	C1	1	1	35.363	0.155	10	AGM	0.0155	35.390
C0EEA211A	A	C2	1	2	35.993	0.155	10	AGM	0.0155	35.985
C0EEA212A	A	C2	1	2	35.863	0.155	10	AGM	0.0155	35.898
C0EEA213A	A	C2	1	2	35.528	0.156	10	AGM	0.0156	35.818
C0EEB111A	B	C1	2	1	33.835	0.150	10	AGM	0.0150	32.787
C0EEB112A	B	C1	2	1	34.522	0.152	10	AGM	0.0152	33.869
C0EEB113A	B	C1	2	1	34.143	0.153	10	AGM	0.0153	33.684
C0EEB114A	B	C1	2	1	34.346	0.153	10	AGM	0.0153	33.811
C0EEB211A	B	C2	2	2	35.486	0.154	10	AGM	0.0154	35.269
C0EEB212A	B	C2	2	2	35.702	0.156	10	AGM	0.0156	35.967
C0EEB213A	B	C2	2	2	34.793	0.157	10	AGM	0.0157	35.153
C0EEC111A	C	C1	3	1	34.236	0.157	10	AGM	0.0157	34.590
C0EEC112A	C	C1	3	1	34.146	0.156	10	AGM	0.0156	34.341
C0EEC113A	C	C1	3	1	34.292	0.155	10	AGM	0.0155	34.314
C0EEC114A	C	C1	3	1	34.029	0.156	10	AGM	0.0156	34.274
C0EEC211A	C	C2	3	2	34.086	0.158	10	AGM	0.0158	34.816
C0EEC212A	C	C2	3	2	34.401	0.158	10	AGM	0.0158	35.019
C0EEC213A	C	C2	3	2	34.815	0.157	10	AGM	0.0157	35.358

	Strength [ksi]	$Strength_{norm}$ [ksi]
Average	34.932	34.891
Standard Dev.	0.803	0.889
Coeff. of Var. [%]	2.298	2.547
Min.	33.835	32.787
Max.	36.266	36.137
Number of Spec.	21	21

	t_{ply} [in]	$Strength_{norm}$ [ksi]
$Average_{norm}$	0.01548	34.891
$Standard\ Dev._{norm}$		0.889
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.547
Min.	0.0150	32.787
Max.	0.0158	36.137
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

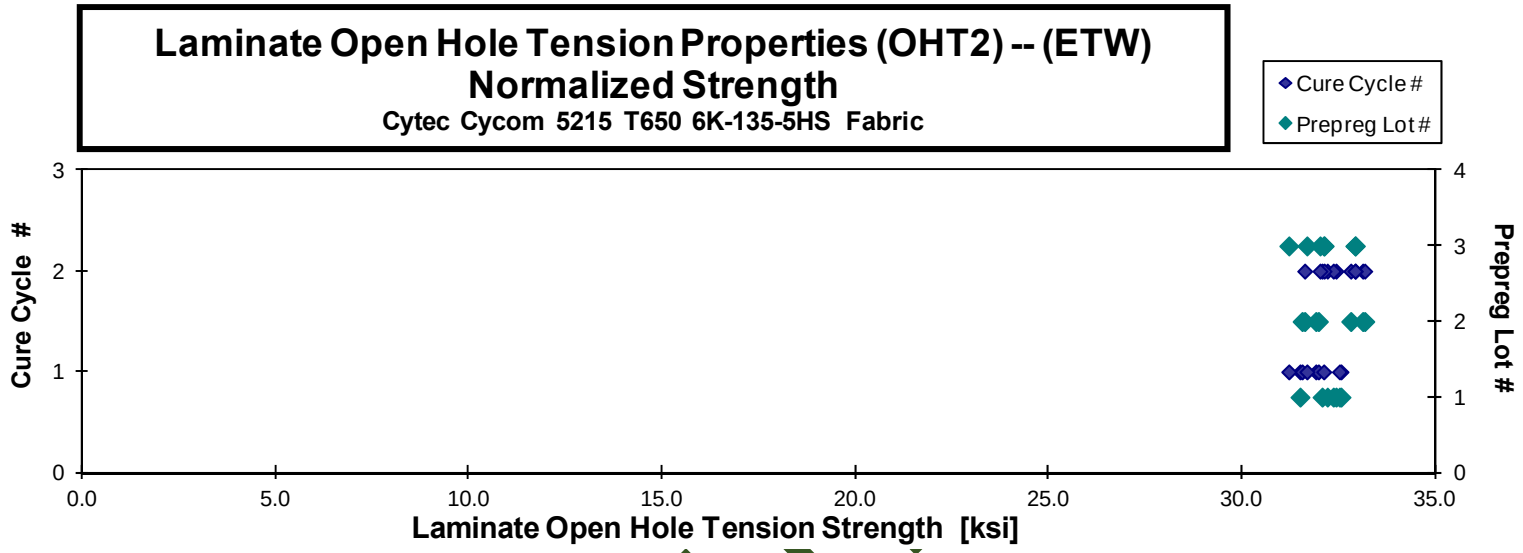
Laminate Open Hole Tension Properties (OHT2) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EEA11BM	A	C1	1	1	32.551	0.155	10	AGM	0.0155	32.565
C0EEA11CM	A	C1	1	1	31.318	0.156	10	AGM	0.0156	31.503
C0EEA11DM	A	C1	1	1	32.303	0.156	10	AGM	0.0156	32.525
C0EEA218M	A	C2	1	2	32.523	0.155	10	AGM	0.0155	32.436
C0EEA219M	A	C2	1	2	32.137	0.155	10	AGM	0.0155	32.075
C0EEA21AM	A	C2	1	2	32.311	0.155	10	AGM	0.0155	32.210
C0EEA21BM	A	C2	1	2	32.527	0.154	10	AGM	0.0154	32.366
C0EEB119M	B	C1	2	1	32.568	0.152	10	AGM	0.0152	31.914
C0EEB11AM	B	C1	2	1	32.870	0.151	10	AGM	0.0151	31.979
C0EEB11BM	B	C1	2	1	32.296	0.151	10	AGM	0.0151	31.559
C0EEB218M	B	C2	2	2	33.152	0.155	10	AGM	0.0155	33.127
C0EEB219M	B	C2	2	2	32.715	0.155	10	AGM	0.0155	32.817
C0EEB21AM	B	C2	2	2	33.147	0.155	10	AGM	0.0155	33.179
C0EEB21BM	B	C2	2	2	32.098	0.153	10	AGM	0.0153	31.626
C0EEC119M	C	C1	3	1	30.795	0.157	10	AGM	0.0157	31.215
C0EEC11AM	C	C1	3	1	31.705	0.157	10	AGM	0.0157	32.118
C0EEC11BM	C	C1	3	1	31.651	0.155	10	AGM	0.0155	31.682
C0EEC218M	C	C2	3	2	31.656	0.157	10	AGM	0.0157	32.129
C0EEC219M	C	C2	3	2	32.403	0.158	10	AGM	0.0158	32.933
C0EEC21AM	C	C2	3	2	31.593	0.157	10	AGM	0.0157	32.021
C0EEC21BM	C	C2	3	2	32.591	0.157	10	AGM	0.0157	32.927

Average	32.234	
Standard Dev.	0.599	
Coeff. of Var. [%]	1.857	
Min.	30.795	
Max.	33.152	
Number of Spec.	21	

$Average_{norm}$	0.01550	32.234
$Standard\ Dev._{norm}$		0.558
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.730
Min.	0.0151	31.215
Max.	0.0158	33.179
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Open Hole Tension Strength [ksi]

4.16 "40/20/40" Open-Hole Tension 3 Properties (OHT3)

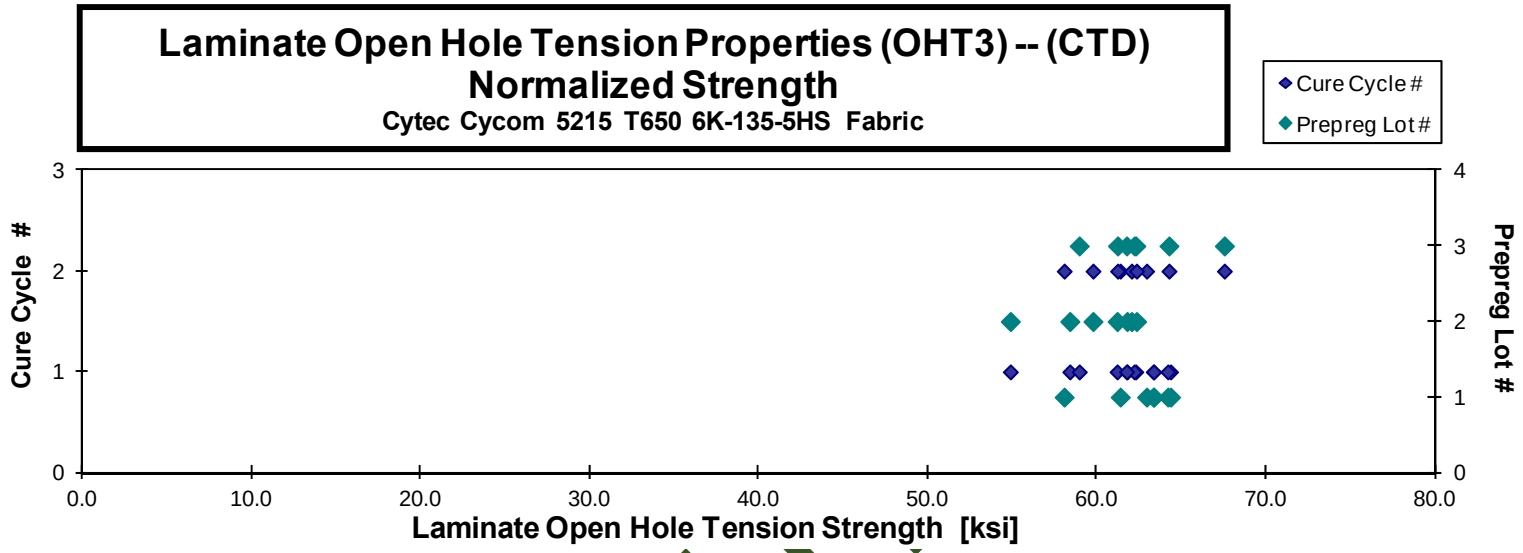
Laminate Open Hole Tension Properties (OHT3) -- (CTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EFA116B	A	C1	1	1	64.261	0.155	10	LGM	0.0155	64.351
C0EFA117B	A	C1	1	1	64.522	0.154	10	LGM	0.0154	64.189
C0EFA118B	A	C1	1	1	64.539	0.152	10	LGM	0.0152	63.338
C0EFA119B	A	C1	1	1	63.143	0.156	10	LGM	0.0156	63.354
C0EFA214B	A	C2	1	2	58.008	0.155	10	LGM	0.0155	58.064
C0EFA215B	A	C2	1	2	63.538	0.154	10	LGM	0.0154	62.937
C0EFA216B	A	C2	1	2	62.241	0.153	10	LGM	0.0153	61.378
C0EFB115B	B	C1	2	1	62.381	0.154	10	LGM	0.0154	61.777
C0EFB116B	B	C1	2	1	62.324	0.152	10	LGM	0.0152	61.192
C0EFB117B	B	C1	2	1	56.127	0.152	10	LGM	0.0152	54.878
C0EFB118B	B	C1	2	1	59.334	0.153	10	LGM	0.0153	58.396
C0EFB214B	B	C2	2	2	62.126	0.155	10	LGM	0.0155	62.046
C0EFB215B	B	C2	2	2	63.468	0.152	10	LGM	0.0152	62.342
C0EFB216B	B	C2	2	2	60.853	0.152	10	LGM	0.0152	59.767
C0EFC115B	C	C1	3	1	62.255	0.155	10	LGM	0.0155	62.295
C0EFC116B	C	C1	3	1	63.278	0.152	10	LGM	0.0152	62.203
C0EFC117B	C	C1	3	1	62.144	0.154	10	LGM	0.0154	61.750
C0EFC118B	C	C1	3	1	58.865	0.155	10	LGM	0.0155	58.953
C0EFC215B	C	C2	3	2	62.757	0.151	10	LGM	0.0151	61.218
C0EFC216B	C	C2	3	2	66.622	0.150	10	LGM	0.0150	64.258
C0EFC217B	C	C2	3	2	68.795	0.152	10	LGM	0.0152	67.537

Average	62.456	
Standard Dev.	2.812	
Coeff. of Var. [%]	4.503	
Min.	56.127	
Max.	68.795	
Number of Spec.	21	

$Average_{norm}$	0.0153	61.725
$Standard\ Dev._{norm}$		2.688
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.354
Min.	0.0150	54.878
Max.	0.0156	67.537
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT3) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Open Hole Tension Strength [ksi]

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

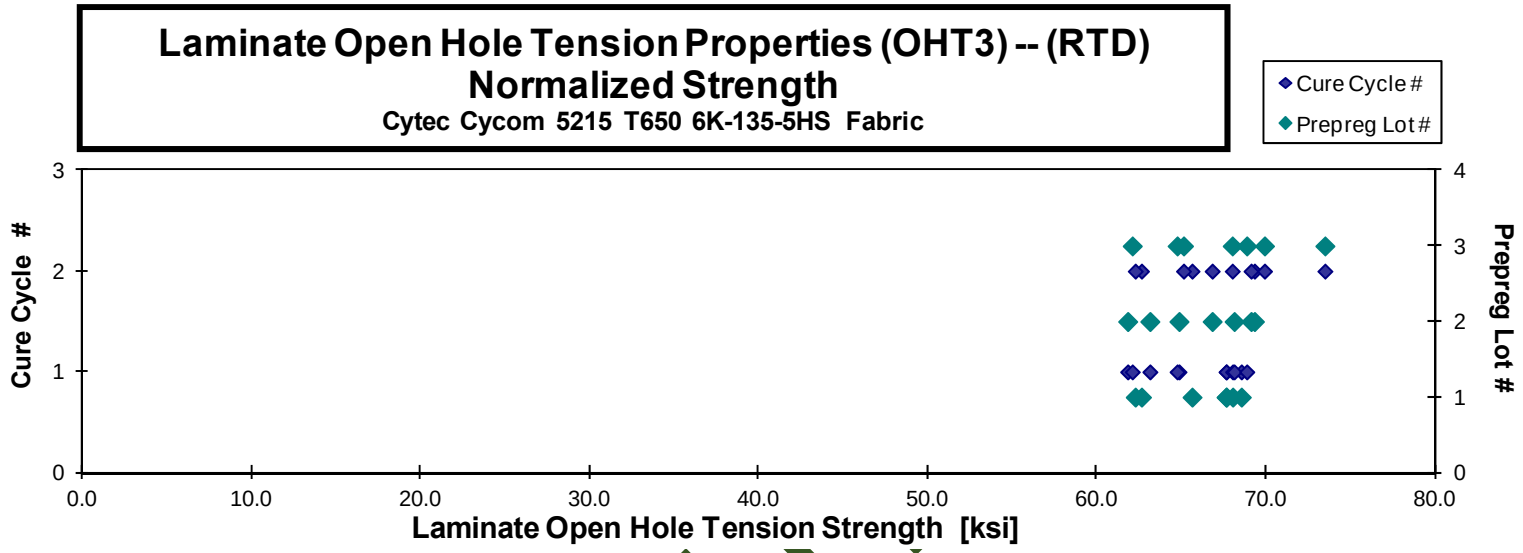
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EFA111A	A	C1	1	1	69.907	0.152	10	LGM	0.0152	68.539
C0EFA112A	A	C1	1	1	67.786	0.155	10	LGM	0.0155	67.647
C0EFA113A	A	C1	1	1	67.589	0.155	10	LGM	0.0155	67.640
C0EFA114A	A	C1	1	1	68.394	0.154	10	LGM	0.0154	68.027
C0EFA211A	A	C2	1	2	62.715	0.155	10	LGM	0.0155	62.634
C0EFA212A	A	C2	1	2	65.654	0.155	10	LGM	0.0155	65.625
C0EFA213A	A	C2	1	2	62.312	0.155	10	LGM	0.0155	62.265
C0EFB111A	B	C1	2	1	68.321	0.155	10	LGM	0.0155	68.116
C0EFB112A	B	C1	2	1	63.533	0.154	10	LGM	0.0154	63.130
C0EFB113A	B	C1	2	1	62.253	0.154	10	LGM	0.0154	61.818
C0EFB114A	B	C1	2	1	65.779	0.153	10	LGM	0.0153	64.853
C0EFB211A	B	C2	2	2	69.278	0.155	10	LGM	0.0155	69.315
C0EFB212A	B	C2	2	2	68.940	0.155	10	LGM	0.0155	69.111
C0EFB213A	B	C2	2	2	67.291	0.154	10	LGM	0.0154	66.814
C0EFC111A	C	C1	3	1	68.395	0.156	10	LGM	0.0156	68.858
C0EFC112A	C	C1	3	1	64.824	0.155	10	LGM	0.0155	64.741
C0EFC113A	C	C1	3	1	61.775	0.156	10	LGM	0.0156	62.087
C0EFC211A	C	C2	3	2	66.280	0.152	10	LGM	0.0152	65.118
C0EFC212A	C	C2	3	2	68.922	0.153	10	LGM	0.0153	68.003
C0EFC213A	C	C2	3	2	71.683	0.151	10	LGM	0.0151	69.910
C0EFC214A	C	C2	3	2	74.694	0.152	10	LGM	0.0152	73.481

Average	66.968	
Standard Dev.	3.314	
Coeff. of Var. [%]	4.949	
Min.	61.775	
Max.	74.694	
Number of Spec.	21	

$Average_{norm}$	0.0154	66.559
$Standard\ Dev._{norm}$		3.072
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.616
Min.	0.0151	61.818
Max.	0.0156	73.481
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Open Hole Tension Strength [ksi]

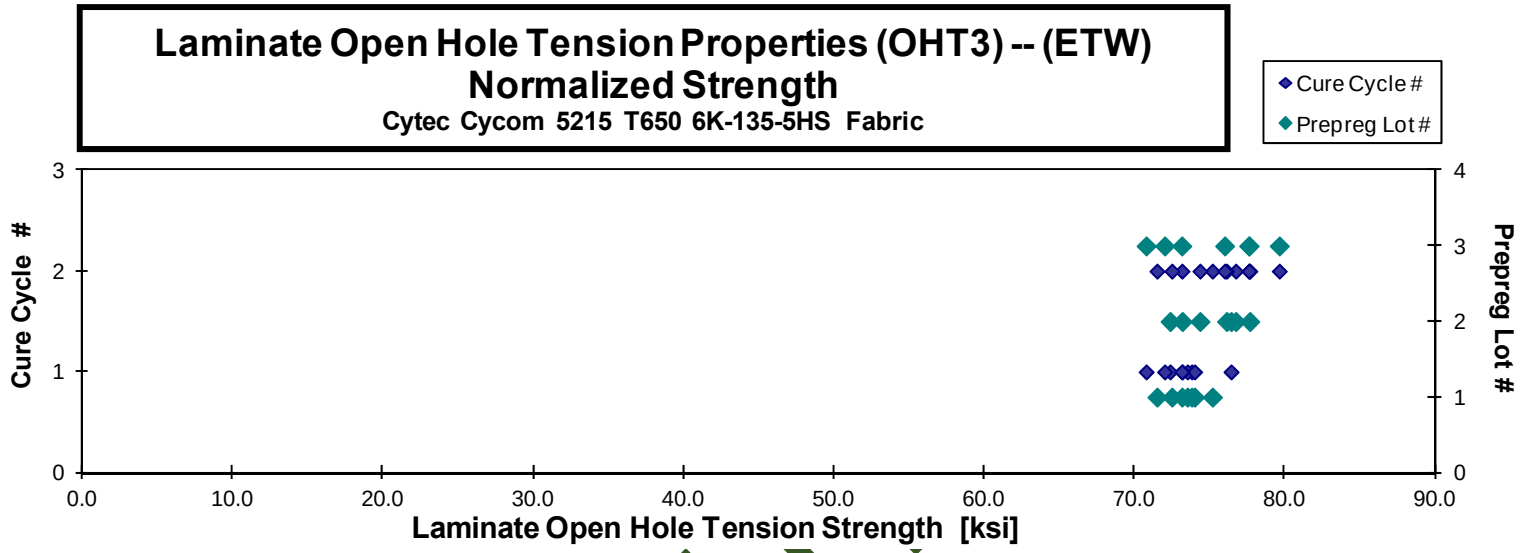
Laminate Open Hole Tension Properties (OHT3) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EFA11BM	A	C1	1	1	73.596	0.155	10	LGM	0.0155	73.801
C0EFA11CM	A	C1	1	1	73.033	0.156	10	LGM	0.0156	73.512
C0EFA11DM	A	C1	1	1	74.161	0.155	10	LGM	0.0155	73.994
C0EFA218M	A	C2	1	2	75.596	0.154	10	LGM	0.0154	75.181
C0EFA219M	A	C2	1	2	73.234	0.155	10	LGM	0.0155	73.155
C0EFA21AM	A	C2	1	2	71.625	0.155	10	LGM	0.0155	71.494
C0EFA21BM	A	C2	1	2	72.732	0.154	10	LGM	0.0154	72.481
C0EFB119M	B	C1	2	1	75.157	0.151	10	LGM	0.0151	73.177
C0EFB11AM	B	C1	2	1	74.257	0.151	10	LGM	0.0151	72.365
C0EFB11BM	B	C1	2	1	77.565	0.153	10	LGM	0.0153	76.423
C0EFB218M	B	C2	2	2	78.513	0.153	10	LGM	0.0153	77.669
C0EFB219M	B	C2	2	2	75.291	0.153	10	LGM	0.0153	74.352
C0EFB21AM	B	C2	2	2	77.550	0.153	10	LGM	0.0153	76.733
C0EFB21BM	B	C2	2	2	77.119	0.153	10	LGM	0.0153	76.123
C0EFC119M	C	C1	3	1	70.713	0.155	10	LGM	0.0155	70.774
C0EFC11AM	C	C1	3	1	73.152	0.155	10	LGM	0.0155	73.144
C0EFC11BM	C	C1	3	1	71.711	0.156	10	LGM	0.0156	72.004
C0EFC218M	C	C2	3	2	78.422	0.153	10	LGM	0.0153	77.604
C0EFC219M	C	C2	3	2	79.132	0.152	10	LGM	0.0152	77.617
C0EFC21AM	C	C2	3	2	81.616	0.151	10	LGM	0.0151	79.632
C0EFC21BM	C	C2	3	2	77.623	0.152	10	LGM	0.0152	75.996

Average	75.323	
Standard Dev.	2.889	
Coeff. of Var. [%]	3.836	
Min.	70.713	
Max.	81.616	
Number of Spec.	21	

$Average_{norm}$	0.0154	74.630
$Standard\ Dev._{norm}$		2.391
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.204
Min.	0.0151	70.774
Max.	0.0156	79.632
Number of Spec.		21


Laminate Open Hole Tension Properties (OHT3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.17 "25/50/25" Filled-Hole Tension 1 Properties (FHT1)

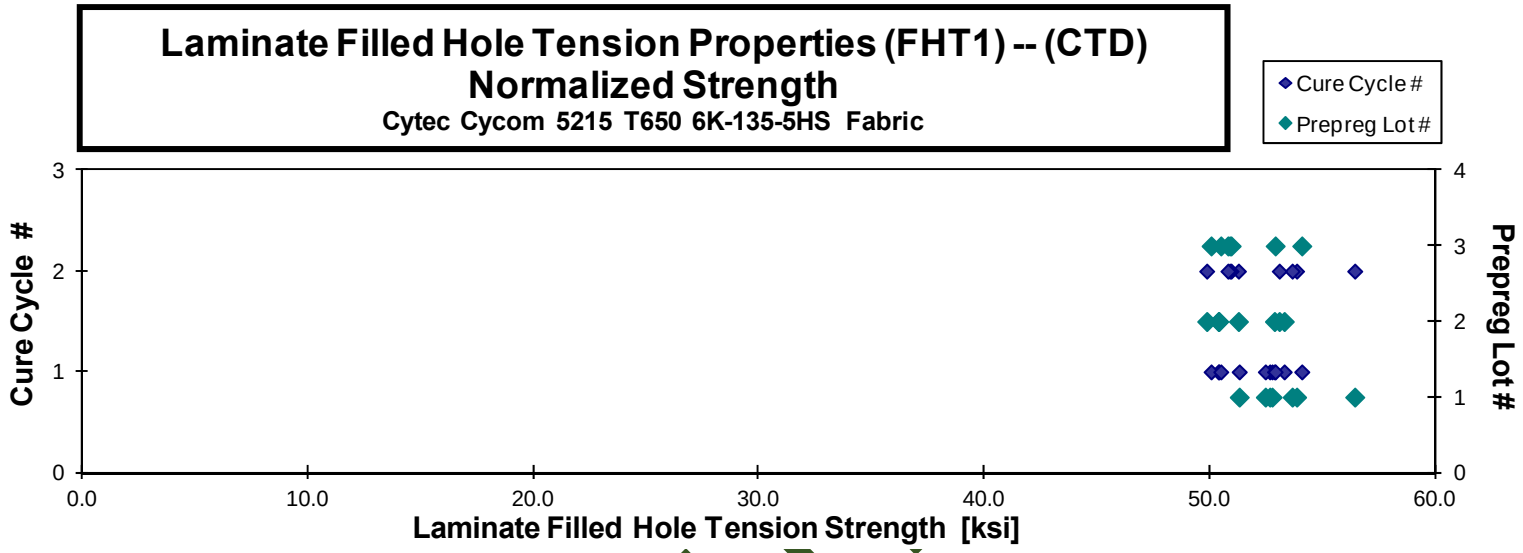
Laminate Filled Hole Tension Properties (FHT1) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E4A116B	A	C1	1	1	52.751	0.124	8	LGM	0.0155	52.666
C0E4A117B	A	C1	1	1	51.464	0.124	8	LGM	0.0155	51.312
C0E4A118B	A	C1	1	1	53.480	0.122	8	LGM	0.0153	52.769
C0E4A119B	A	C1	1	1	52.990	0.123	8	LGM	0.0153	52.470
C0E4A214B	A	C2	1	2	53.849	0.124	8	LGM	0.0155	53.856
C0E4A215B	A	C2	1	2	55.991	0.125	8	LGM	0.0156	56.435
C0E4A216B	A	C2	1	2	54.553	0.122	8	LGM	0.0152	53.659
C0E4B115B	B	C1	2	1	53.408	0.124	8	LGM	0.0155	53.308
C0E4B116B	B	C1	2	1	51.463	0.121	8	LGM	0.0152	50.404
C0E4B117B	B	C1	2	1	50.399	0.124	8	LGM	0.0155	50.386
C0E4B118B	B	C1	2	1	52.932	0.124	8	LGM	0.0155	52.875
C0E4B214B	B	C2	2	2	50.185	0.123	8	LGM	0.0154	49.868
C0E4B215B	B	C2	2	2	53.195	0.124	8	LGM	0.0155	53.087
C0E4B216B	B	C2	2	2	52.209	0.122	8	LGM	0.0152	51.276
C0E4C115B	C	C1	3	1	52.623	0.125	8	LGM	0.0156	52.906
C0E4C116B	C	C1	3	1	49.963	0.124	8	LGM	0.0155	50.064
C0E4C117B	C	C1	3	1	53.319	0.126	8	LGM	0.0157	54.086
C0E4C118B	C	C1	3	1	50.088	0.125	8	LGM	0.0156	50.492
C0E4C214B	C	C2	3	2	50.781	0.124	8	LGM	0.0156	50.952
C0E4C215B	C	C2	3	2	50.808	0.124	8	LGM	0.0155	50.890
C0E4C216B	C	C2	3	2	50.816	0.124	8	LGM	0.0155	50.810

Average	52.251	
Standard Dev.	1.632	
Coeff. of Var. [%]	3.123	
Min.	49.963	
Max.	55.991	
Number of Spec.	21	

$Average_{norm}$	0.0155	52.122
$Standard\ Dev._{norm}$		1.675
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.213
Min.	0.0152	49.868
Max.	0.0157	56.435
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT1) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 (FHT1) -- (RTD) Strength

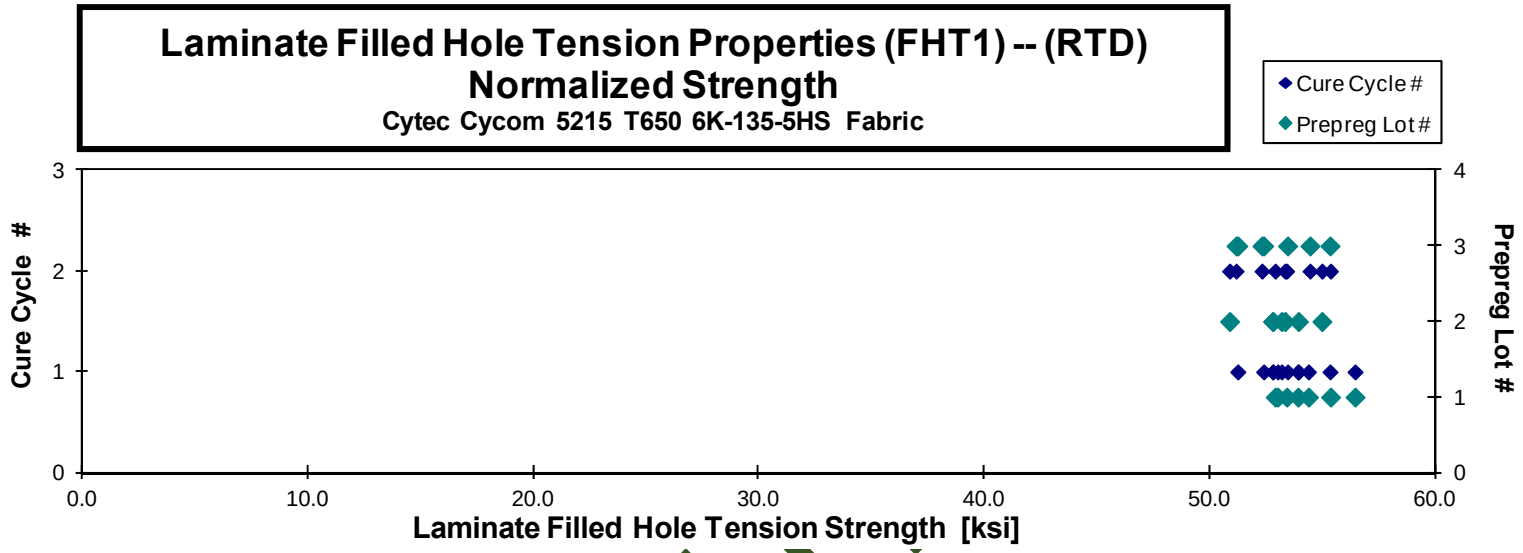
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E4A111A	A	C1	1	1	53.946	0.122	8	LGM / AGM	0.0152	53.018
C0E4A112A	A	C1	1	1	53.954	0.125	8	LGM / AGM	0.0156	54.382
C0E4A113A	A	C1	1	1	56.411	0.124	8	LGM / AGM	0.0155	56.449
C0E4A114A	A	C1	1	1	53.867	0.124	8	LGM / AGM	0.0155	53.917
C0E4A211A	A	C2	1	2	55.287	0.124	8	LGM / AGM	0.0155	55.361
C0E4A212A	A	C2	1	2	53.066	0.125	8	LGM / AGM	0.0156	53.416
C0E4A213A	A	C2	1	2	53.279	0.123	8	LGM / AGM	0.0154	52.907
C0E4B111A	B	C1	2	1	52.572	0.125	8	AGM / LGM	0.0156	52.805
C0E4B112A	B	C1	2	1	53.126	0.123	8	AGM / LGM	0.0154	52.797
C0E4B113A	B	C1	2	1	54.126	0.124	8	AGM / LGM	0.0154	53.937
C0E4B114A	B	C1	2	1	53.280	0.124	8	AGM / LGM	0.0155	53.194
C0E4B211A	B	C2	2	2	55.481	0.123	8	AGM / LGM	0.0154	54.982
C0E4B212A	B	C2	2	2	50.815	0.124	8	AGM / LGM	0.0155	50.884
C0E4B213A	B	C2	2	2	53.118	0.125	8	AGM / LGM	0.0156	53.339
C0E4C111A	C	C1	3	1	51.585	0.126	8	LGM / AGM	0.0157	52.396
C0E4C112A	C	C1	3	1	52.882	0.125	8	LGM / AGM	0.0157	53.457
C0E4C113A	C	C1	3	1	54.793	0.125	8	LGM / AGM	0.0157	55.338
C0E4C114A	C	C1	3	1	50.294	0.126	8	LGM / AGM	0.0158	51.247
C0E4C211A	C	C2	3	2	54.189	0.125	8	LGM / AGM	0.0156	54.451
C0E4C212A	C	C2	3	2	51.971	0.125	8	LGM / AGM	0.0156	52.320
C0E4C213A	C	C2	3	2	50.548	0.126	8	LGM / AGM	0.0157	51.173

Average	53.266	
Standard Dev.	1.605	
Coeff. of Var. [%]	3.014	
Min.	50.294	
Max.	56.411	
Number of Spec.	21	

$Average_{norm}$	0.0155	53.418
$Standard\ Dev._{norm}$		1.437
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.690
Min.	0.0152	50.884
Max.	0.0158	56.449
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

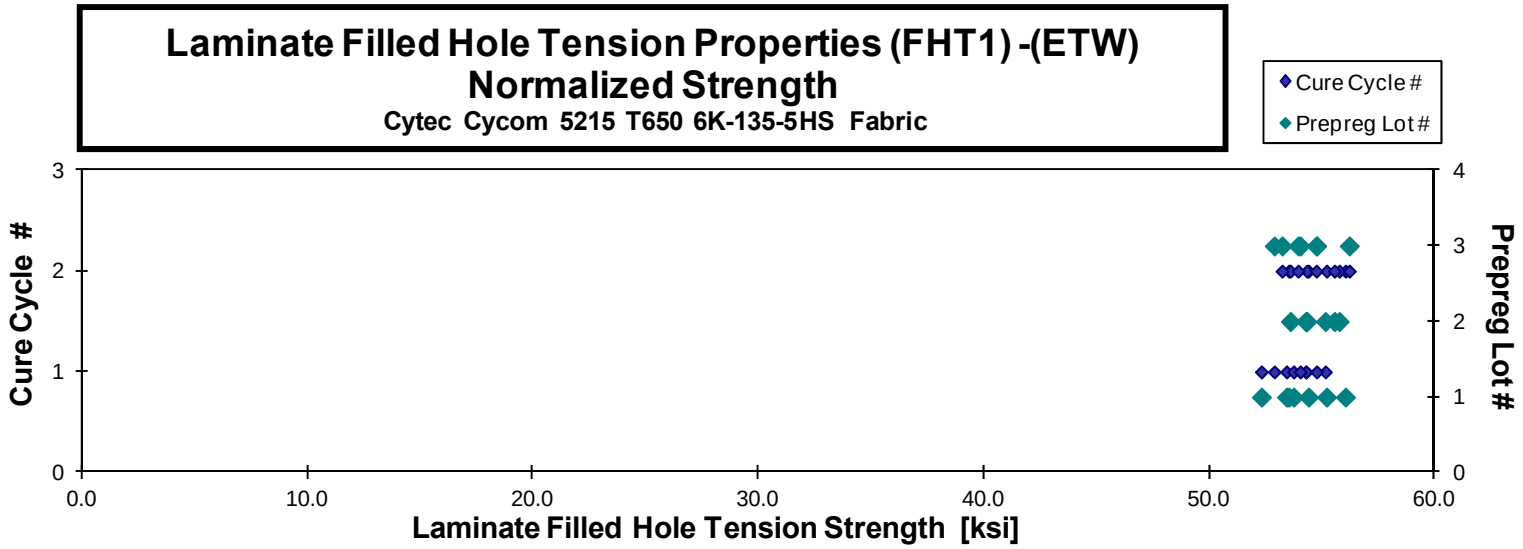
Laminate Filled Hole Tension Properties (FHT1) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E4A11BM	A	C1	1	1	52.557	0.123	8	AGM	0.0154	52.296
C0E4A11CM	A	C1	1	1	53.269	0.124	8	AGM	0.0155	53.412
C0E4A11DM	A	C1	1	1	53.887	0.124	8	AGM	0.0155	53.721
C0E4A218M	A	C2	1	2	53.456	0.124	8	AGM	0.0155	53.514
C0E4A219M	A	C2	1	2	54.717	0.123	8	AGM	0.0154	54.386
C0E4A21AM	A	C2	1	2	55.114	0.124	8	AGM	0.0155	55.188
C0E4A21BM	A	C2	1	2	55.776	0.125	8	AGM	0.0156	56.023
C0E4B119M	B	C1	2	1	54.522	0.123	8	AGM	0.0154	54.272
C0E4B11AM	B	C1	2	1	54.566	0.123	8	AGM	0.0154	54.272
C0E4B11BM	B	C1	2	1	55.251	0.124	8	AGM	0.0155	55.132
C0E4B218M	B	C2	2	2	53.944	0.123	8	AGM	0.0154	53.582
C0E4B219M	B	C2	2	2	54.370	0.124	8	AGM	0.0155	54.311
C0E4B21AM	B	C2	2	2	55.583	0.124	8	AGM	0.0155	55.748
C0E4B21BM	B	C2	2	2	55.843	0.123	8	AGM	0.0154	55.535
C0E4C119M	C	C1	3	1	53.684	0.125	8	AGM	0.0156	54.016
C0E4C11AM	C	C1	3	1	54.825	0.124	8	AGM	0.0155	54.744
C0E4C11BM	C	C1	3	1	52.769	0.124	8	AGM	0.0155	52.868
C0E4C218M	C	C2	3	2	53.754	0.124	8	AGM	0.0155	53.920
C0E4C219M	C	C2	3	2	56.128	0.124	8	AGM	0.0155	56.196
C0E4C21AM	C	C2	3	2	53.749	0.126	8	AGM	0.0158	54.731
C0E4C21BM	C	C2	3	2	52.373	0.126	8	AGM	0.0157	53.211

Average	54.292	
Standard Dev.	1.092	
Coeff. of Var. [%]	2.011	
Min.	52.373	
Max.	56.128	
Number of Spec.	21	

$Average_{norm}$	0.0155	54.337
$Standard\ Dev._{norm}$		1.043
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.920
Min.	0.0154	52.296
Max.	0.0158	56.196
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT1) -(ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.18 "10/80/10" Filled-Hole Tension 2 Properties (FHT2)

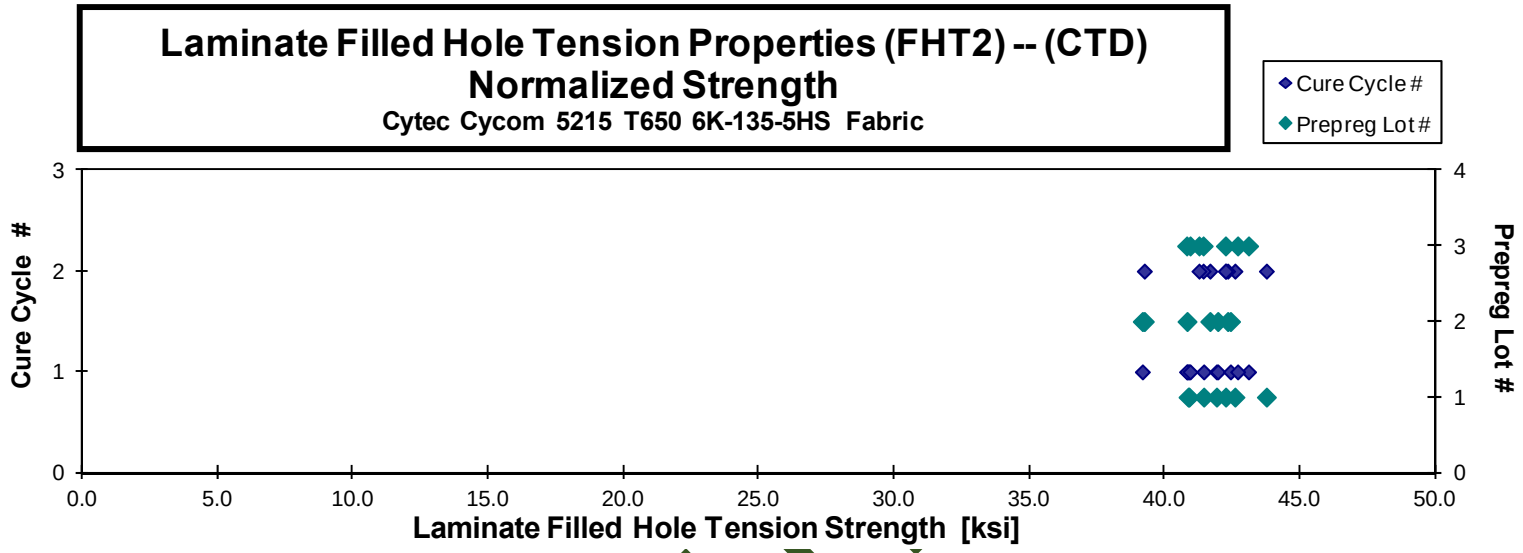
Laminate Filled Hole Tension Properties (FHT2) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E5A116B	A	C1	1	1	40.717	0.156	10	AGM	0.0156	40.870
C0E5A117B	A	C1	1	1	41.779	0.154	10	AGM	0.0154	41.446
C0E5A118B	A	C1	1	1	41.904	0.151	10	AGM	0.0151	40.904
C0E5A119B	A	C1	1	1	42.382	0.153	10	AGM	0.0153	41.917
C0E5A214B	A	C2	1	2	42.087	0.156	10	AGM	0.0156	42.254
C0E5A215B	A	C2	1	2	42.591	0.155	10	AGM	0.0155	42.600
C0E5A216B	A	C2	1	2	44.180	0.154	10	AGM	0.0154	43.762
C0E5B115B	B	C1	2	1	41.966	0.155	10	AGM	0.0155	41.966
C0E5B116B	B	C1	2	1	43.207	0.152	10	AGM	0.0152	42.436
C0E5B117B	B	C1	2	1	40.655	0.156	10	AGM	0.0156	40.830
C0E5B118B	B	C1	2	1	39.356	0.154	10	AGM	0.0154	39.178
C0E5B214B	B	C2	2	2	41.741	0.155	10	AGM	0.0155	41.674
C0E5B215B	B	C2	2	2	39.501	0.154	10	AGM	0.0154	39.250
C0E5B216B	B	C2	2	2	43.016	0.153	10	AGM	0.0153	42.331
C0E5C115B	C	C1	3	1	43.095	0.155	10	AGM	0.0155	43.104
C0E5C116B	C	C1	3	1	42.550	0.156	10	AGM	0.0156	42.701
C0E5C117B	C	C1	3	1	41.376	0.153	10	AGM	0.0153	40.816
C0E5C118B	C	C1	3	1	40.994	0.155	10	AGM	0.0155	40.941
C0E5C214B	C	C2	3	2	41.054	0.156	10	AGM	0.0156	41.425
C0E5C215B	C	C2	3	2	41.960	0.156	10	AGM	0.0156	42.249
C0E5C216B	C	C2	3	2	41.684	0.153	10	AGM	0.0153	41.271

Average	41.800	
Standard Dev.	1.175	
Coeff. of Var. [%]	2.811	
Min.	39.356	
Max.	44.180	
Number of Spec.	21	

$Average_{norm}$	0.0154	41.616
$Standard\ Dev._{norm}$		1.133
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.723
Min.	0.0151	39.178
Max.	0.0156	43.762
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT2) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Filled Hole Tension Strength [ksi]

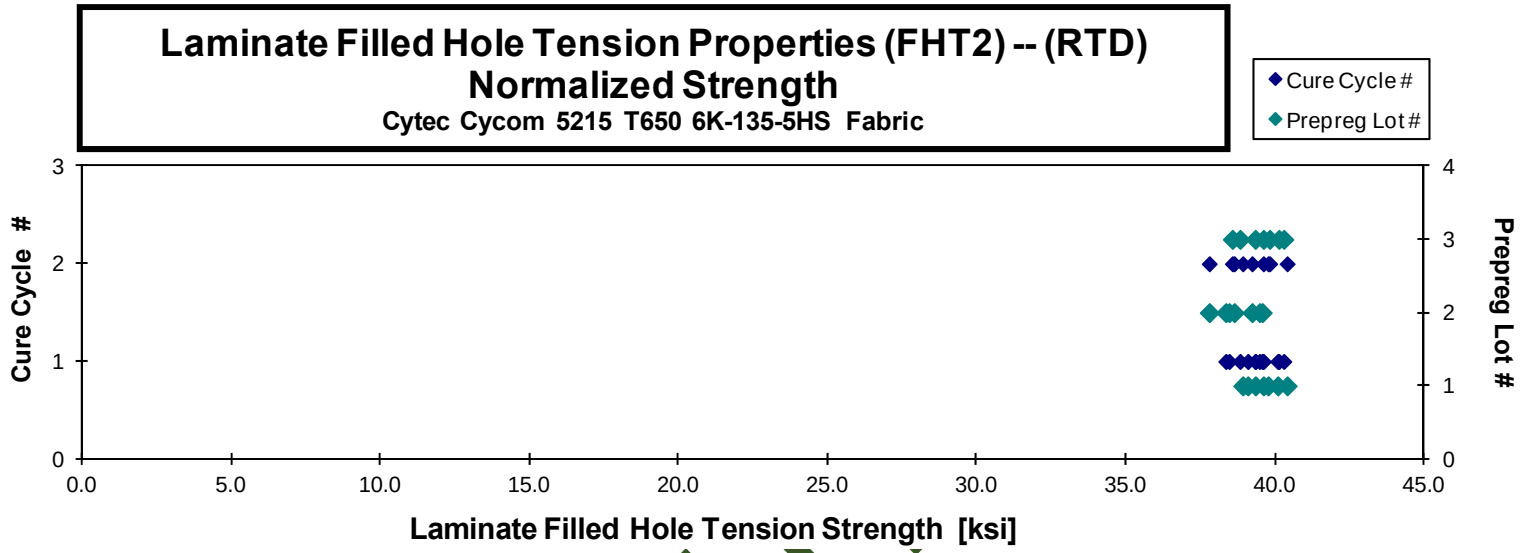
Laminate Filled Hole Tension Properties (FHT2) -- (RTD) Strength

Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E5A112A	A	C1	1	1	38.865	0.156	10	AGM	0.0156	39.087
C0E5A113A	A	C1	1	1	39.902	0.156	10	AGM	0.0156	40.091
C0E5A114A	A	C1	1	1	39.191	0.157	10	AGM	0.0157	39.608
C0E5A115A	A	C1	1	1	39.658	0.154	10	AGM	0.0154	39.339
C0E5A211A	A	C2	1	2	40.087	0.154	10	AGM	0.0154	39.768
C0E5A212A	A	C2	1	2	38.930	0.155	10	AGM	0.0155	38.917
C0E5A213A	A	C2	1	2	40.509	0.155	10	AGM	0.0155	40.405
C0E5B111A	B	C1	2	1	39.692	0.155	10	LGM / AGM	0.0155	39.568
C0E5B112A	B	C1	2	1	38.278	0.155	10	LGM / AGM	0.0155	38.348
C0E5B113A	B	C1	2	1	38.803	0.154	10	LGM / AGM	0.0154	38.461
C0E5B114A	B	C1	2	1	39.365	0.155	10	LGM / AGM	0.0155	39.480
C0E5B211A	B	C2	2	2	39.304	0.155	10	AGM	0.0155	39.228
C0E5B212A	B	C2	2	2	39.211	0.153	10	AGM	0.0153	38.629
C0E5B213A	B	C2	2	2	38.179	0.153	10	AGM	0.0153	37.793
C0E5C111A	C	C1	3	1	39.989	0.152	10	AGM	0.0152	39.335
C0E5C112A	C	C1	3	1	38.862	0.155	10	AGM	0.0155	38.824
C0E5C113A	C	C1	3	1	40.357	0.155	10	AGM	0.0155	40.292
C0E5C114A	C	C1	3	1	40.092	0.155	10	AGM	0.0155	40.127
C0E5C211A	C	C2	3	2	39.494	0.156	10	AGM	0.0156	39.816
C0E5C212A	C	C2	3	2	38.536	0.155	10	AGM	0.0155	38.569
C0E5C213A	C	C2	3	2	39.352	0.156	10	AGM	0.0156	39.606

	Strength [ksi]		$Strength_{norm}$ [ksi]
Average	39.365	$Average_{norm}$	39.300
Standard Dev.	0.655	$Standard\ Dev._{norm}$	0.692
Coeff. of Var. [%]	1.663	$Coeff.\ of\ Var.\ [\%]_{norm}$	1.761
Min.	38.179	Min.	37.793
Max.	40.509	Max.	40.405
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Tension Properties (FHT2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Strength [ksi]

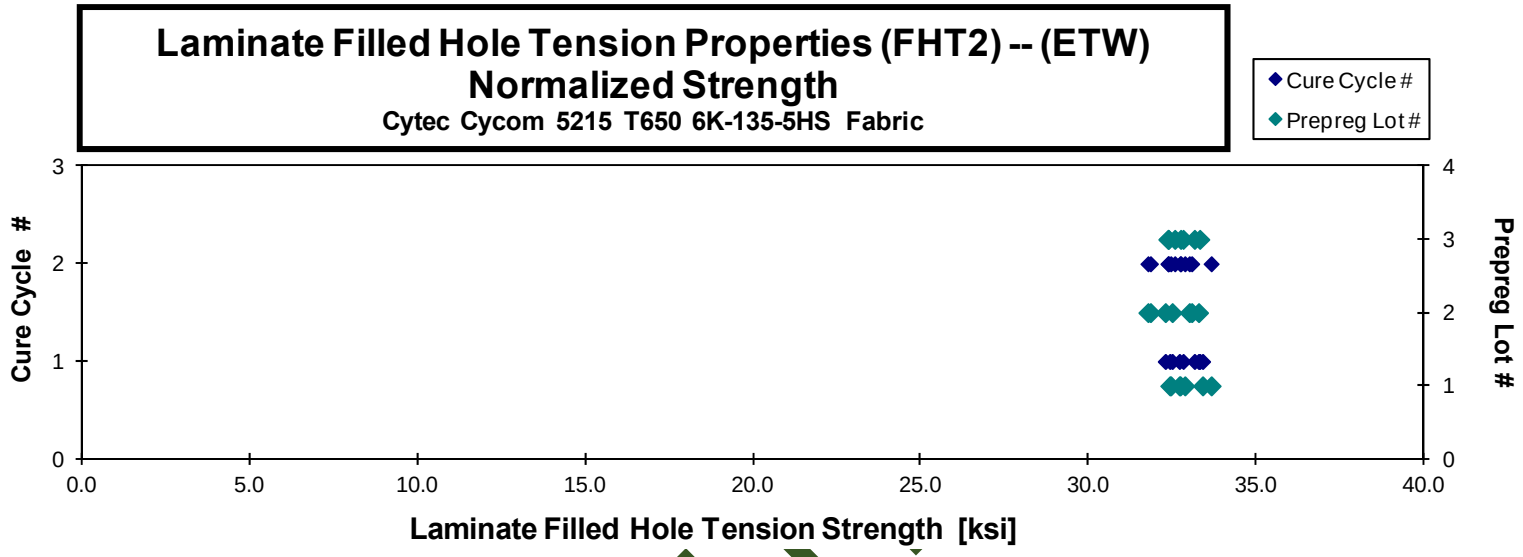
Laminate Filled Hole Tension Properties (FHT2) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]
0.0155

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]
C0E5A11BM	A	C1	1	1	33.754	0.153	10	AGM	0.0153	33.395
C0E5A11CM	A	C1	1	1	32.490	0.155	10	AGM	0.0155	32.417
C0E5A11DM	A	C1	1	1	33.115	0.153	10	AGM	0.0153	32.702
C0E5A218M	A	C2	1	2	33.438	0.156	10	AGM	0.0156	33.650
C0E5A219M	A	C2	1	2	32.652	0.154	10	AGM	0.0154	32.445
C0E5A21AM	A	C2	1	2	32.774	0.155	10	AGM	0.0155	32.865
C0E5A21BM	A	C2	1	2	32.755	0.155	10	AGM	0.0155	32.727
C0E5B119M	B	C1	2	1	32.323	0.155	10	AGM	0.0155	32.284
C0E5B11AM	B	C1	2	1	32.128	0.157	10	AGM	0.0157	32.487
C0E5B11BM	B	C1	2	1	33.512	0.154	10	AGM	0.0154	33.274
C0E5B218M	B	C2	2	2	31.914	0.154	10	AGM	0.0154	31.766
C0E5B219M	B	C2	2	2	32.027	0.154	10	AGM	0.0154	31.841
C0E5B21AM	B	C2	2	2	32.930	0.155	10	AGM	0.0155	33.001
C0E5B21BM	B	C2	2	2	33.267	0.154	10	AGM	0.0154	33.070
C0E5C119M	C	C1	3	1	32.418	0.157	10	AGM	0.0157	32.816
C0E5C11AM	C	C1	3	1	33.300	0.154	10	AGM	0.0154	33.153
C0E5C11BM	C	C1	3	1	33.257	0.155	10	AGM	0.0155	33.311
C0E5C218M	C	C2	3	2	32.019	0.157	10	AGM	0.0157	32.363
C0E5C219M	C	C2	3	2	32.587	0.155	10	AGM	0.0155	32.566
C0E5C21AM	C	C2	3	2	32.467	0.155	10	AGM	0.0155	32.372
C0E5C21BM	C	C2	3	2	32.737	0.155	10	AGM	0.0155	32.740

Average	32.755	
Standard Dev.	0.533	
Coeff. of Var. [%]	1.626	
Min.	31.914	
Max.	33.754	
Number of Spec.	21	

$Average_{norm}$	0.0155	32.726
$Standard\ Dev._{norm}$		0.488
$Coeff.\ of\ Var.\ [\%]_{norm}$		1.491
Min.	0.0153	31.766
Max.	0.0157	33.650
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.19 "40/20/40" Filled-Hole Tension 3 Properties (FHT3)

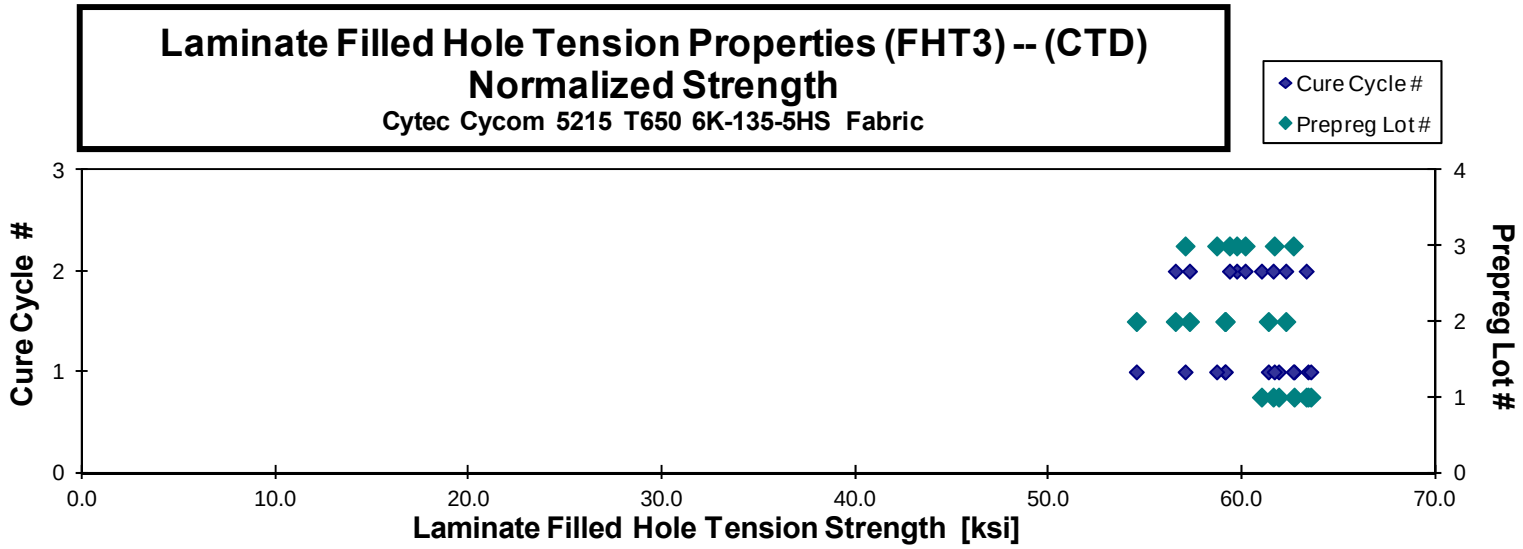
Laminate Filled Hole Tension Properties (FHT3) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]
0.0155

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]
C0E6A116B	A	C1	1	1	63.299	0.155	10	LGM	0.0155	63.421
C0E6A117B	A	C1	1	1	62.853	0.155	10	LGM	0.0155	62.704
C0E6A118B	A	C1	1	1	63.980	0.154	10	LGM	0.0154	63.567
C0E6A119B	A	C1	1	1	62.148	0.154	10	LGM	0.0154	61.901
C0E6A214B	A	C2	1	2	63.246	0.155	10	LGM	0.0155	63.328
C0E6A215B	A	C2	1	2	61.079	0.155	10	LGM	0.0155	61.013
C0E6A216B	A	C2	1	2	61.752	0.155	10	LGM	0.0155	61.619
C0E6B115B	B	C1	2	1	54.968	0.154	10	LGM	0.0154	54.537
C0E6B116B	B	C1	2	1	60.795	0.151	10	LGM	0.0151	59.115
C0E6B117B	B	C1	2	1	60.540	0.151	10	LGM	0.0151	59.141
C0E6B118B	B	C1	2	1	63.716	0.149	10	LGM	0.0149	61.366
C0E6B214B	B	C2	2	2	58.888	0.151	10	LGM	0.0151	57.286
C0E6B215B	B	C2	2	2	63.634	0.152	10	LGM	0.0152	62.272
C0E6B216B	B	C2	2	2	58.426	0.150	10	LGM	0.0150	56.554
C0E6C115B	C	C1	3	1	62.075	0.156	10	LGM	0.0156	62.662
C0E6C116B	C	C1	3	1	56.872	0.156	10	LGM	0.0156	57.061
C0E6C117B	C	C1	3	1	60.766	0.157	10	LGM	0.0157	61.674
C0E6C118B	C	C1	3	1	57.834	0.157	10	LGM	0.0157	58.692
C0E6C214B	C	C2	3	2	58.711	0.158	10	LGM	0.0158	59.728
C0E6C215B	C	C2	3	2	58.892	0.156	10	LGM	0.0156	59.354
C0E6C216B	C	C2	3	2	60.071	0.155	10	LGM	0.0155	60.168

Average	60.693	
Standard Dev.	2.484	
Coeff. of Var. [%]	4.093	
Min.	54.968	
Max.	63.980	
Number of Spec.	21	

$Average_{norm}$	0.0154	60.341
$Standard\ Dev._{norm}$		2.510
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.160
Min.	0.0149	54.537
Max.	0.0158	63.567
Number of Spec.		21


Laminate Filled Hole Tension Properties (FHT3) -- (CTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Tension Strength [ksi]

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

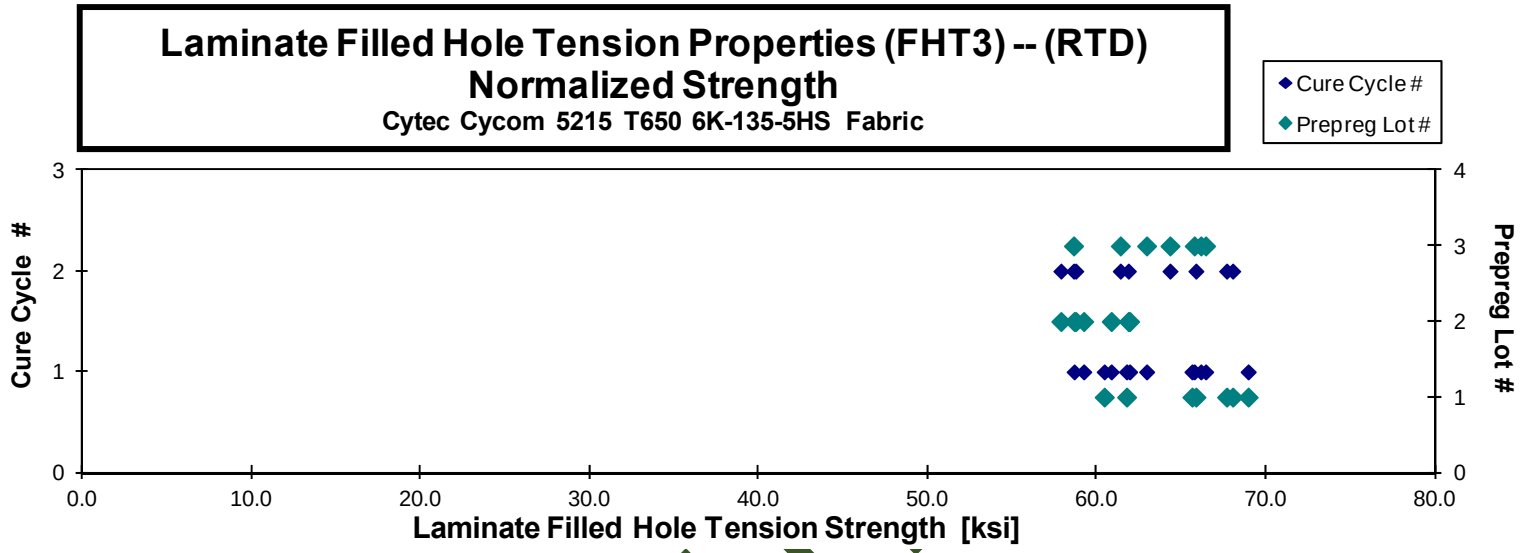
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]
0.0155

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]
C0E6A111A	A	C1	1	1	70.312	0.152	10	LGM	0.0152	68.943
C0E6A112A	A	C1	1	1	65.867	0.154	10	LGM	0.0154	65.619
C0E6A113A	A	C1	1	1	62.547	0.153	10	LGM	0.0153	61.753
C0E6A114A	A	C1	1	1	60.387	0.155	10	LGM	0.0155	60.432
C0E6A211A	A	C2	1	2	66.396	0.154	10	LGM	0.0154	65.853
C0E6A212A	A	C2	1	2	68.927	0.153	10	LGM	0.0153	68.030
C0E6A213A	A	C2	1	2	67.867	0.155	10	LGM	0.0155	67.670
C0E6B111A	B	C1	2	1	63.059	0.152	10	LGM	0.0152	61.934
C0E6B112A	B	C1	2	1	61.635	0.153	10	LGM	0.0153	60.846
C0E6B113A	B	C1	2	1	59.471	0.153	10	LGM	0.0153	58.652
C0E6B114A	B	C1	2	1	59.820	0.153	10	LGM	0.0153	59.216
C0E6B211A	B	C2	2	2	59.821	0.152	10	LGM	0.0152	58.747
C0E6B212A	B	C2	2	2	59.035	0.152	10	LGM	0.0152	57.867
C0E6B213A	B	C2	2	2	63.574	0.151	10	LGM	0.0151	61.858
C0E6C111A	C	C1	3	1	61.879	0.158	10	LGM	0.0158	62.937
C0E6C112A	C	C1	3	1	65.409	0.157	10	LGM	0.0157	66.429
C0E6C113A	C	C1	3	1	65.227	0.157	10	LGM	0.0157	66.146
C0E6C114A	C	C1	3	1	65.102	0.157	10	LGM	0.0157	65.753
C0E6C211A	C	C2	3	2	57.882	0.157	10	LGM	0.0157	58.616
C0E6C212A	C	C2	3	2	60.852	0.156	10	LGM	0.0156	61.382
C0E6C213A	C	C2	3	2	63.670	0.157	10	LGM	0.0157	64.320

Average	63.273	
Standard Dev.	3.434	
Coeff. of Var. [%]	5.427	
Min.	57.882	
Max.	70.312	
Number of Spec.	21	

$Average_{norm}$	0.0154	63.000
$Standard\ Dev._{norm}$		3.487
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.534
Min.	0.0151	57.867
Max.	0.0158	68.943
Number of Spec.		21

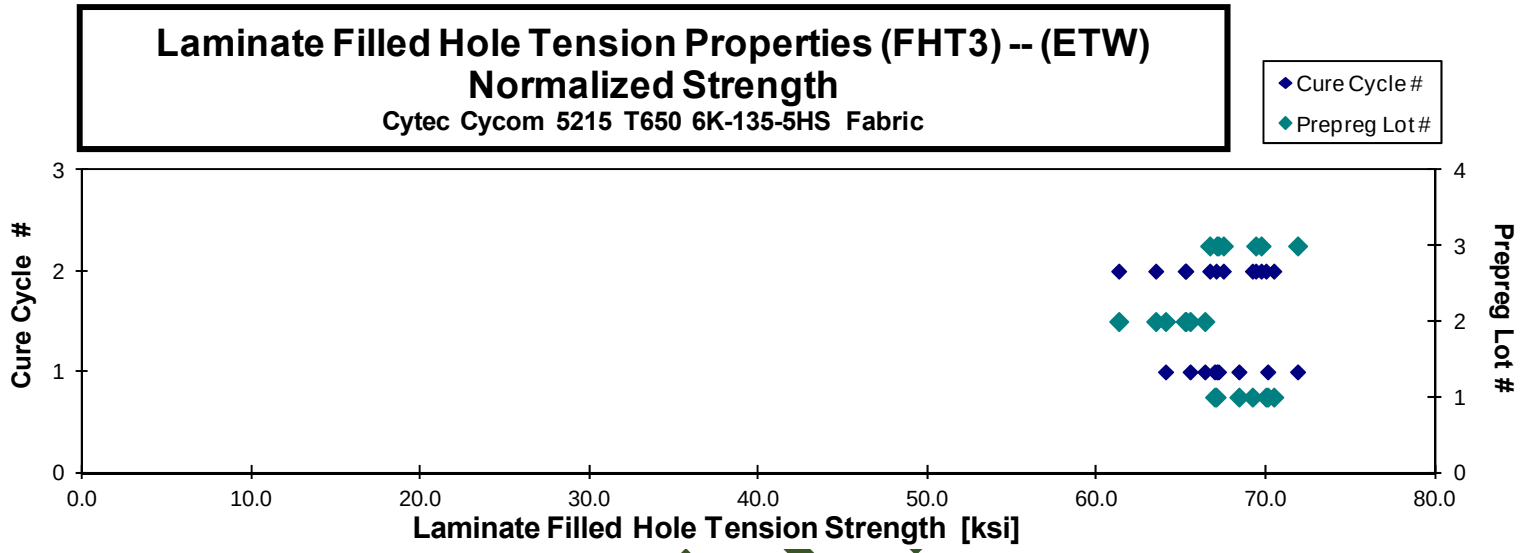

Laminate Filled Hole Tension Properties (FHT3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
Laminate Filled Hole Tension Strength [ksi]

Laminate Filled Hole Tension Properties (FHT3) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E6A11BM	A	C1	1	1	66.316	0.157	10	LGM	0.0157	66.958
C0E6A11CM	A	C1	1	1	70.554	0.154	10	LGM	0.0154	70.099
C0E6A11DM	A	C1	1	1	68.534	0.155	10	LGM	0.0155	68.394
C0E6A218M	A	C2	1	2	69.972	0.155	10	LGM	0.0155	69.994
C0E6A219M	A	C2	1	2	70.022	0.156	10	LGM	0.0156	70.458
C0E6A21AM	A	C2	1	2	69.216	0.155	10	LGM	0.0155	69.193
C0E6A21BM	A	C2	1	2	67.438	0.154	10	LGM	0.0154	67.046
C0E6B119M	B	C1	2	1	67.359	0.151	10	LGM	0.0151	65.512
C0E6B11AM	B	C1	2	1	67.973	0.151	10	LGM	0.0151	66.379
C0E6B11BM	B	C1	2	1	65.783	0.151	10	LGM	0.0151	64.057
C0E6B218M	B	C2	2	2	64.979	0.151	10	LGM	0.0151	63.477
C0E6B219M	B	C2	2	2	66.425	0.152	10	LGM	0.0152	65.218
C0E6B21AM	B	C2	2	2	66.932	0.151	10	LGM	0.0151	65.255
C0E6B21BM	B	C2	2	2	63.168	0.150	10	LGM	0.0150	61.286
C0E6C119M	C	C1	3	1	70.524	0.158	10	LGM	0.0158	71.866
C0E6C11AM	C	C1	3	1	66.080	0.157	10	LGM	0.0157	67.089
C0E6C11BM	C	C1	3	1	66.439	0.157	10	LGM	0.0157	67.189
C0E6C218M	C	C2	3	2	66.285	0.156	10	LGM	0.0156	66.669
C0E6C219M	C	C2	3	2	66.319	0.158	10	LGM	0.0158	67.474
C0E6C21AM	C	C2	3	2	68.973	0.157	10	LGM	0.0157	69.707
C0E6C21BM	C	C2	3	2	68.504	0.157	10	LGM	0.0157	69.388

	Strength		$Strength_{norm}$
Average	67.512	$Average_{norm}$	67.272
Standard Dev.	1.943	$Standard\ Dev._{norm}$	2.602
Coeff. of Var. [%]	2.877	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.867
Min.	63.168	Min.	61.286
Max.	70.554	Max.	71.866
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Tension Properties (FHT3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.20 "25/50/25" Open-Hole Compression 1 Properties (OHC1)

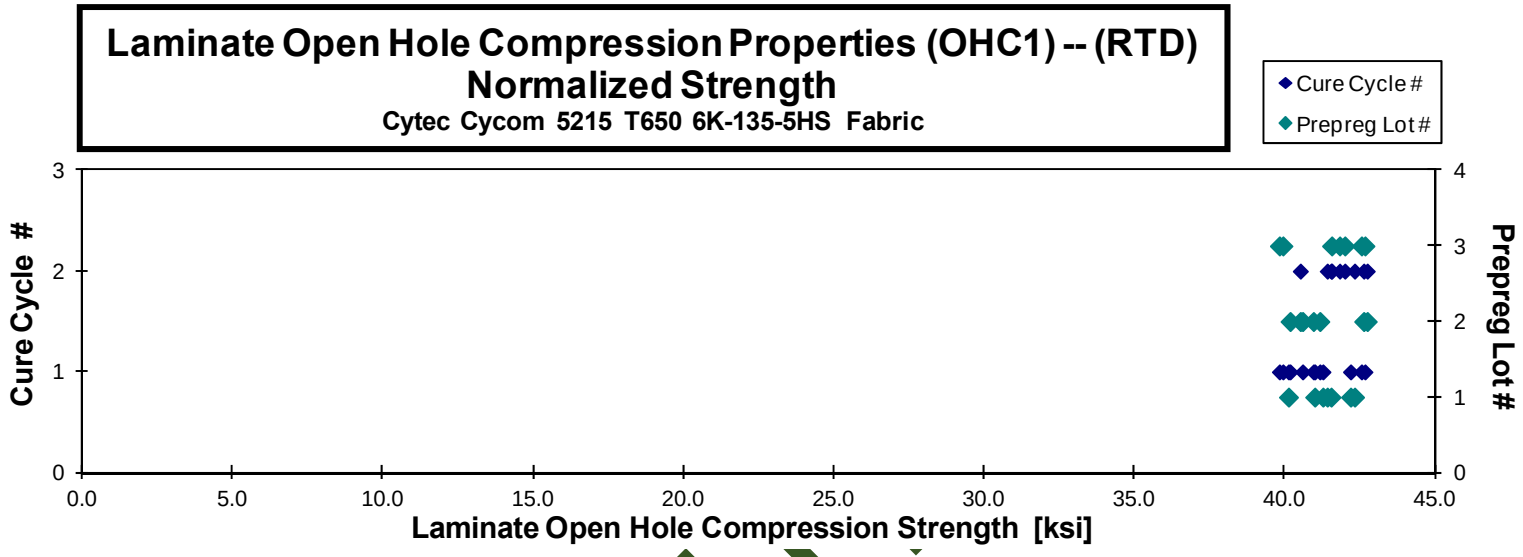
Laminate Open Hole Compression Properties (OHC1) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]
0.0155

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]
C0EGA111A	A	C1	1	1	40.575	0.184	12	AGM	0.0153	40.121
C0EGA112A	A	C1	1	1	41.344	0.186	12	AGM	0.0155	41.266
C0EGA113A	A	C1	1	1	40.944	0.186	12	MGM	0.0155	40.996
C0EGA114A	A	C1	1	1	42.199	0.186	12	AGM	0.0155	42.188
C0EGA211A	A	C2	1	2	42.424	0.182	12	AGM	0.0152	41.539
C0EGA212A	A	C2	1	2	42.997	0.183	12	AGM	0.0153	42.319
C0EGA213A	A	C2	1	2	42.057	0.183	12	MGM	0.0153	41.413
C0EGB111A	B	C1	2	1	41.546	0.183	12	LGM	0.0153	40.950
C0EGB112A	B	C1	2	1	40.643	0.186	12	AGM	0.0155	40.592
C0EGB113A	B	C1	2	1	41.084	0.186	12	LGM	0.0155	41.165
C0EGB114A	B	C1	2	1	40.168	0.186	12	LGM/AGM	0.0155	40.175
C0EGB211A	B	C2	2	2	40.736	0.185	12	LGM	0.0154	40.517
C0EGB212A	B	C2	2	2	42.849	0.185	12	LGM/AGM	0.0154	42.626
C0EGB213A	B	C2	2	2	42.681	0.186	12	LGM/AGM	0.0155	42.742
C0EGC111A	C	C1	3	1	43.318	0.183	12	LGM/AGM	0.0153	42.666
C0EGC112A	C	C1	3	1	40.354	0.184	12	LGM/AGM	0.0153	39.938
C0EGC113A	C	C1	3	1	42.573	0.186	12	MGM	0.0155	42.550
C0EGC114A	C	C1	3	1	40.093	0.185	12	LGM	0.0154	39.820
C0EGC211A	C	C2	3	2	42.548	0.184	12	MGM	0.0153	41.996
C0EGC212A	C	C2	3	2	42.064	0.185	12	AGM	0.0154	41.823
C0EGC213A	C	C2	3	2	41.673	0.185	12	MGM	0.0155	41.558

Average	41.661	
Standard Dev.	1.006	
Coeff. of Var. [%]	2.414	
Min.	40.093	
Max.	43.318	
Number of Spec.	21	

$Average_{norm}$	0.0154	41.379
$Standard\ Dev._{norm}$		0.946
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.287
Min.	0.0152	39.820
Max.	0.0155	42.742
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

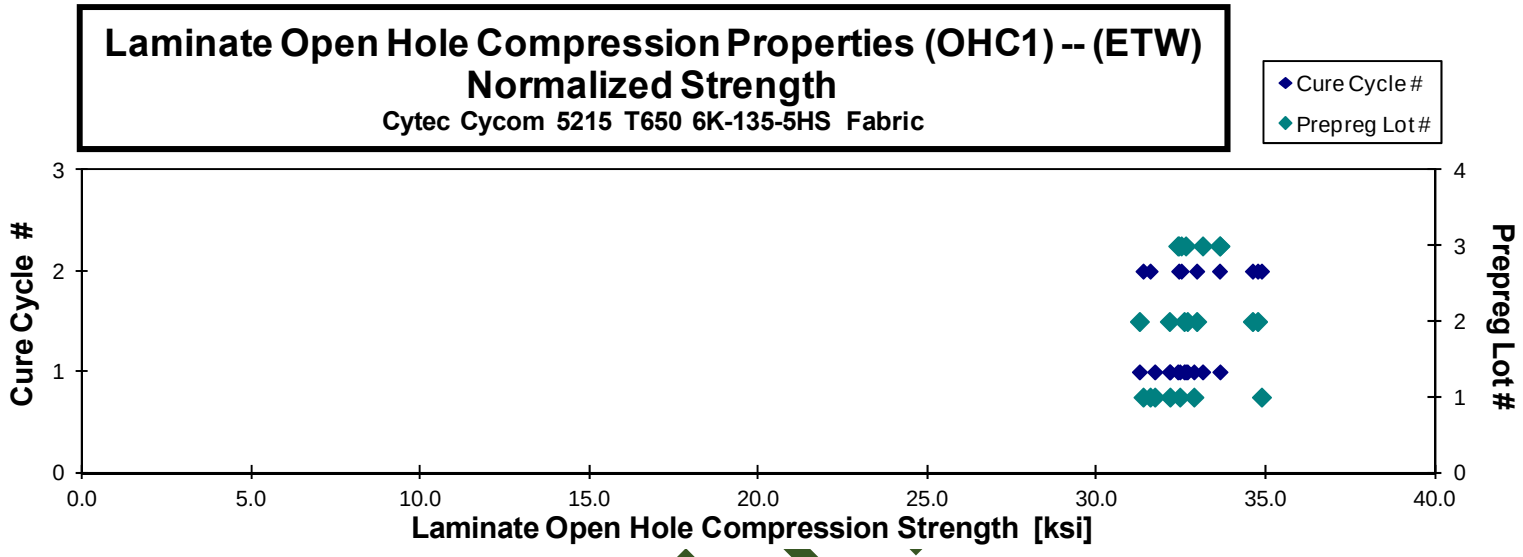
Laminate Open Hole Compression Properties (OHC1) -- (ETW) Strength

Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EGA117M	A	C1	1	1	32.143	0.183	12	LGM	0.0153	31.708
C0EGA118M	A	C1	1	1	32.336	0.187	12	MGM	0.0156	32.449
C0EGA119M	A	C1	1	1	32.168	0.186	12	AGM	0.0155	32.156
C0EGA11AM	A	C1	1	1	32.783	0.186	12	AGM	0.0155	32.865
C0EGA216M	A	C2	1	2	35.394	0.183	12	MGM	0.0153	34.865
C0EGA217M	A	C2	1	2	31.729	0.185	12	AGM	0.0154	31.573
C0EGA218M	A	C2	1	2	31.707	0.184	12	AGM	0.0153	31.363
C0EGB116M	B	C1	2	1	33.102	0.183	12	MGM	0.0153	32.577
C0EGB117M	B	C1	2	1	32.925	0.185	12	MGM	0.0154	32.671
C0EGB118M	B	C1	2	1	31.478	0.185	12	MGM	0.0154	31.255
C0EGB119M	B	C1	2	1	32.277	0.185	12	MGM	0.0154	32.141
C0EGB216M	B	C2	2	2	34.994	0.185	12	LGM	0.0154	34.749
C0EGB217M	B	C2	2	2	34.870	0.185	12	LGM	0.0154	34.598
C0EGB218M	B	C2	2	2	33.137	0.185	12	MGM	0.0154	32.949
C0EGC116M	C	C1	3	1	33.981	0.184	12	AGM	0.0153	33.637
C0EGC117M	C	C1	3	1	32.381	0.186	12	AGM / LGM	0.0155	32.390
C0EGC118M	C	C1	3	1	32.975	0.187	12	AGM / LGM	0.0156	33.123
C0EGC119M	C	C1	3	1	32.729	0.185	12	MGM	0.0155	32.624
C0EGC216M	C	C2	3	2	34.051	0.184	12	MGM	0.0153	33.623
C0EGC217M	C	C2	3	2	32.257	0.187	12	AGM	0.0156	32.419
C0EGC218M	C	C2	3	2	32.538	0.186	12	MGM	0.0155	32.492

	Strength		$Strength_{norm}$
Average	32.950	$Average_{norm}$	32.773
Standard Dev.	1.107	$Standard\ Dev._{norm}$	1.035
Coeff. of Var. [%]	3.360	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.157
Min.	31.478	Min.	31.255
Max.	35.394	Max.	34.865
Number of Spec.	21	Number of Spec.	21


Laminate Open Hole Compression Properties (OHC1) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

4.21 "10/80/10" Open-Hole Compression 2 Properties (OHC2)

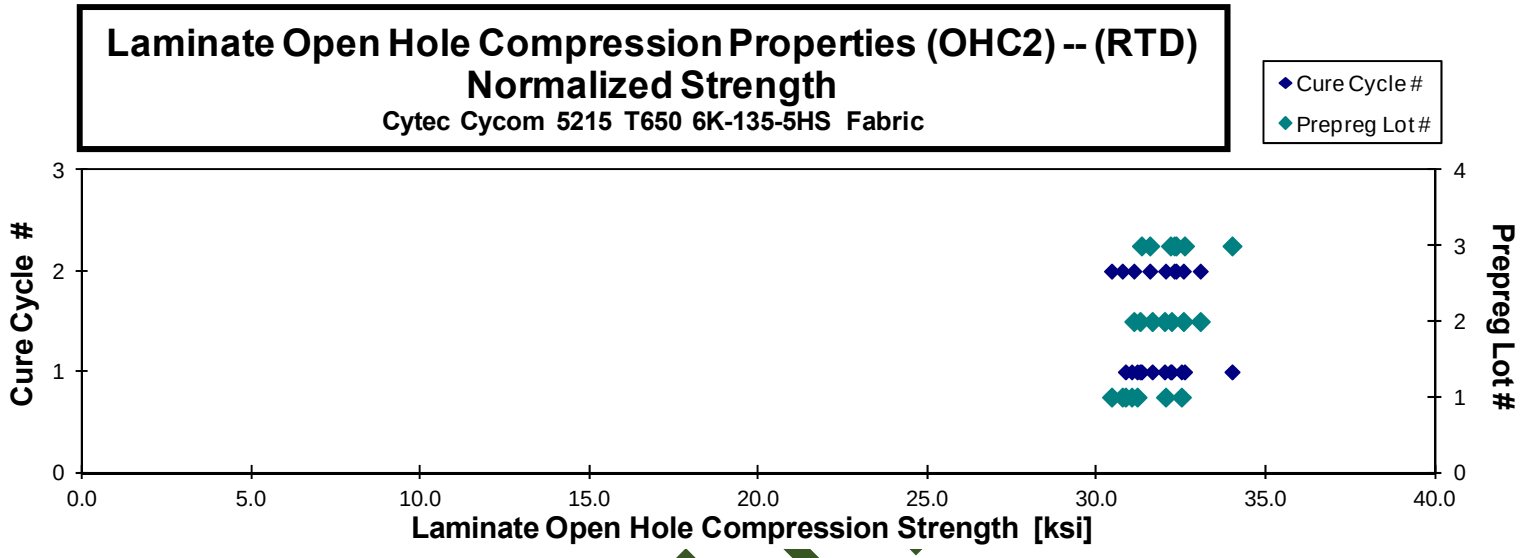
Laminate Open Hole Compression Properties (OHC2) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EHA111A	A	C1	1	1	30.568	0.156	10	MGM	0.0156	30.841
C0EHA112A	A	C1	1	1	31.084	0.156	10	MGM	0.0156	31.187
C0EHA113A	A	C1	1	1	32.012	0.157	10	AGM	0.0157	32.497
C0EHA114A	A	C1	1	1	30.741	0.156	10	MGM	0.0156	31.025
C0EHA211A	A	C2	1	2	32.351	0.153	10	AGM	0.0153	32.028
C0EHA212A	A	C2	1	2	31.145	0.153	10	AGM	0.0153	30.749
C0EHA213A	A	C2	1	2	30.679	0.154	10	AGM	0.0154	30.432
C0EHB111A	B	C1	2	1	31.654	0.155	10	MGM	0.0155	31.633
C0EHB112A	B	C1	2	1	32.360	0.153	10	AGM	0.0153	31.998
C0EHB113A	B	C1	2	1	31.399	0.154	10	MGM	0.0154	31.274
C0EHB114A	B	C1	2	1	32.713	0.153	10	AGM	0.0153	32.203
C0EHB211A	B	C2	2	2	31.108	0.155	10	AGM	0.0155	31.091
C0EHB212A	B	C2	2	2	32.730	0.154	10	AGM	0.0154	32.554
C0EHB213A	B	C2	2	2	32.843	0.156	10	AGM	0.0156	33.055
C0EHC111A	C	C1	3	1	32.592	0.155	10	MGM	0.0155	32.588
C0EHC113A	C	C1	3	1	33.726	0.156	10	MGM	0.0156	33.994
C0EHC114A	C	C1	3	1	31.424	0.154	10	LGM / AGM	0.0154	31.316
C0EHC115A	C	C1	3	1	32.452	0.154	10	MGM	0.0154	32.173
C0EHC211A	C	C2	3	2	31.230	0.157	10	AGM	0.0157	31.563
C0EHC212A	C	C2	3	2	32.511	0.154	10	MGM	0.0154	32.284
C0EHC213A	C	C2	3	2	32.183	0.156	10	AGM	0.0156	32.339

Average	31.881
Standard Dev.	0.857
Coeff. of Var. [%]	2.688
Min.	30.568
Max.	33.726
Number of Spec.	21

$Average_{norm}$	0.0155	31.849
$Standard\ Dev._{norm}$		0.863
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.710
Min.	0.0153	30.432
Max.	0.0157	33.994
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

Laminate Open Hole Compression Properties (OHC2) -- (ETW) Strength

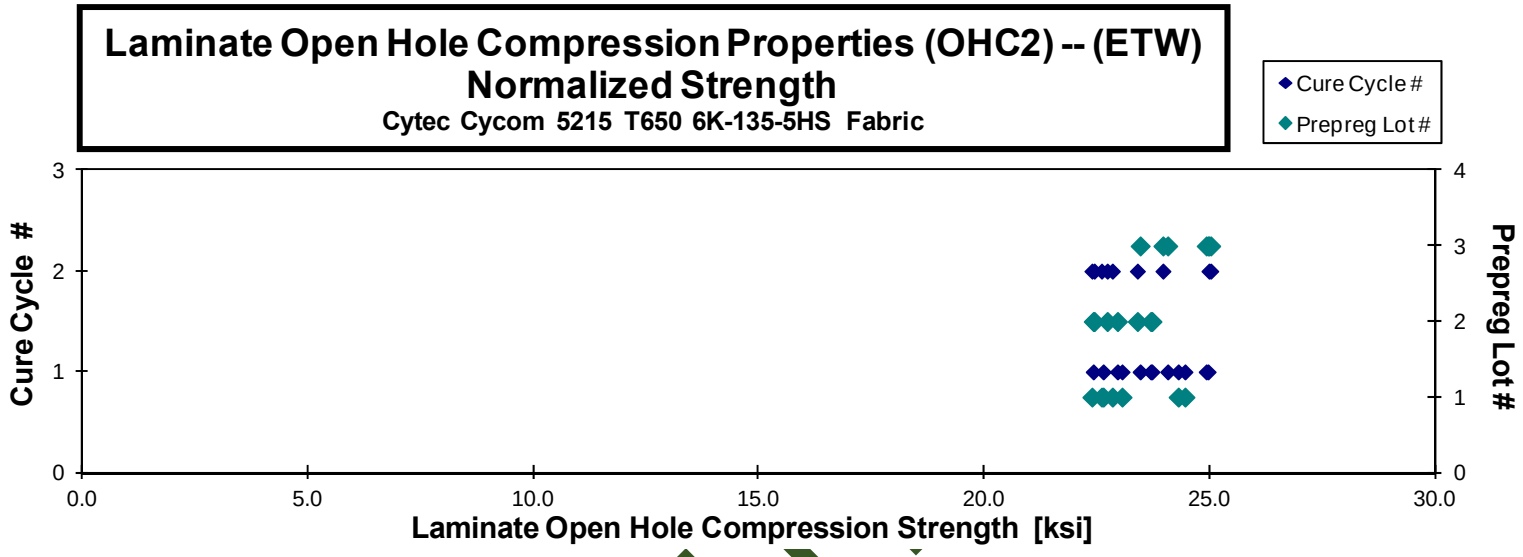
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EHA117M	A	C1	1	1	23.969	0.157	10	MGM	0.0157	24.302
C0EHA118M	A	C1	1	1	24.266	0.156	10	MGM	0.0156	24.451
C0EHA119M	A	C1	1	1	22.453	0.156	10	MGM	0.0156	22.639
C0EHA11AM	A	C1	1	1	22.813	0.157	10	AGM	0.0157	23.056
C0EHA216M	A	C2	1	2	22.699	0.154	10	AGM	0.0154	22.601
C0EHA217M	A	C2	1	2	22.637	0.153	10	MGM	0.0153	22.389
C0EHA218M	A	C2	1	2	23.010	0.154	10	MGM	0.0154	22.842
C0EHB116M	B	C1	2	1	22.440	0.155	10	MGM	0.0155	22.418
C0EHB117M	B	C1	2	1	22.992	0.155	10	MGM	0.0155	22.955
C0EHB118M	B	C1	2	1	23.847	0.154	10	MGM	0.0154	23.719
C0EHB119M	B	C1	2	1	23.811	0.154	10	MGM	0.0154	23.693
C0EHB216M	B	C2	2	2	23.472	0.155	10	MGM	0.0155	23.396
C0EHB217M	B	C2	2	2	22.597	0.154	10	AGM	0.0154	22.439
C0EHB218M	B	C2	2	2	22.945	0.154	10	MGM	0.0154	22.728
C0EHC116M	C	C1	3	1	24.890	0.155	10	MGM	0.0155	24.965
C0EHC117M	C	C1	3	1	24.848	0.155	10	AGM	0.0155	24.923
C0EHC118M	C	C1	3	1	23.504	0.155	10	MGM	0.0155	23.458
C0EHC119M	C	C1	3	1	24.237	0.154	10	MGM	0.0154	24.070
C0EHC216M	C	C2	3	2	24.927	0.155	10	MGM	0.0155	24.983
C0EHC217M	C	C2	3	2	23.856	0.156	10	MGM	0.0156	23.964
C0EHC218M	C	C2	3	2	24.945	0.155	10	MGM	0.0155	25.023

Average		23.579
Standard Dev.		0.870
Coeff. of Var. [%]		3.690
Min.		22.440
Max.		24.945
Number of Spec.		21

$Average_{norm}$	0.0155	23.572
$Standard\ Dev._{norm}$		0.932
$Coeff.\ of\ Var.\ [\%]_{norm}$		3.954
Min.	0.0153	22.389
Max.	0.0157	25.023
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

4.22 "40/20/40" Open-Hole Compression 3 Properties (OHC3)

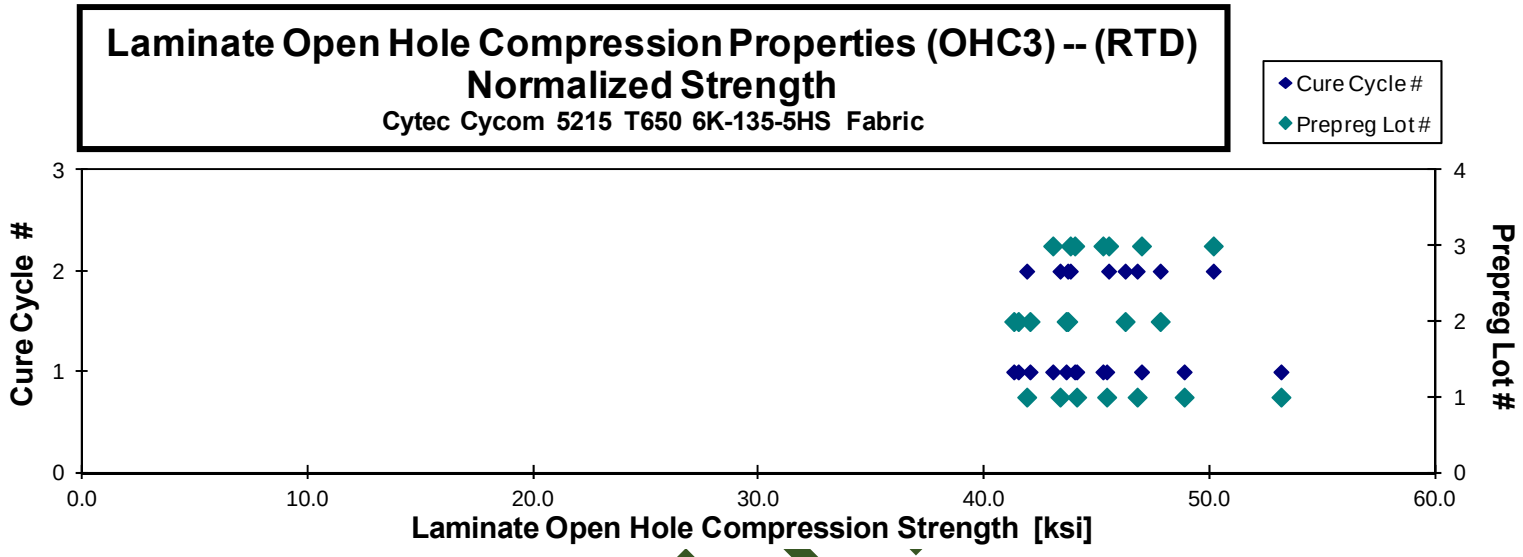
Laminate Open Hole Compression Properties (OHC3) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EIA111A	A	C1	1	1	48.835	0.155	10	LGM	0.0155	48.867
C0EIA112A	A	C1	1	1	53.144	0.155	10	LGM	0.0155	53.161
C0EIA113A	A	C1	1	1	45.562	0.155	10	LGM	0.0155	45.430
C0EIA114A	A	C1	1	1	44.248	0.154	10	LGM	0.0154	44.101
C0EIA211A	A	C2	1	2	43.469	0.155	10	LGM	0.0155	43.362
C0EIA212A	A	C2	1	2	41.696	0.156	10	LGM	0.0156	41.884
C0EIA213A	A	C2	1	2	46.995	0.154	10	LGM	0.0154	46.783
C0EIB111A	B	C1	2	1	41.271	0.156	10	LGM	0.0156	41.510
C0EIB112A	B	C1	2	1	43.220	0.156	10	LGM	0.0156	43.633
C0EIB113A	B	C1	2	1	40.887	0.157	10	MGM	0.0157	41.309
C0EIB114A	B	C1	2	1	41.385	0.157	10	LGM	0.0157	42.030
C0EIB211A	B	C2	2	2	48.600	0.152	10	LGM	0.0152	47.806
C0EIB212A	B	C2	2	2	46.655	0.154	10	LGM	0.0154	46.248
C0EIB213A	B	C2	2	2	43.969	0.154	10	LGM	0.0154	43.704
C0EIC111A	C	C1	3	1	46.486	0.157	10	LGM	0.0157	46.976
C0EIC112A	C	C1	3	1	44.420	0.158	10	MGM	0.0158	45.265
C0EIC113A	C	C1	3	1	42.468	0.157	10	MGM	0.0157	43.039
C0EIC114A	C	C1	3	1	43.601	0.156	10	LGM	0.0156	44.013
C0EIC211A	C	C2	3	2	46.811	0.151	10	LGM	0.0151	45.517
C0EIC212A	C	C2	3	2	45.246	0.150	10	LGM	0.0150	43.816
C0EIC213A	C	C2	3	2	51.522	0.151	10	LGM	0.0151	50.159

Average	45.261	
Standard Dev.	3.304	
Coeff. of Var. [%]	7.300	
Min.	40.887	
Max.	53.144	
Number of Spec.	21	

$Average_{norm}$	0.0155	45.172
$Standard\ Dev._{norm}$		3.018
$Coeff.\ of\ Var.\ [\%]_{norm}$		6.681
Min.	0.0150	41.309
Max.	0.0158	53.161
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

Laminate Open Hole Compression Properties (OHC3) -- (ETW) Strength

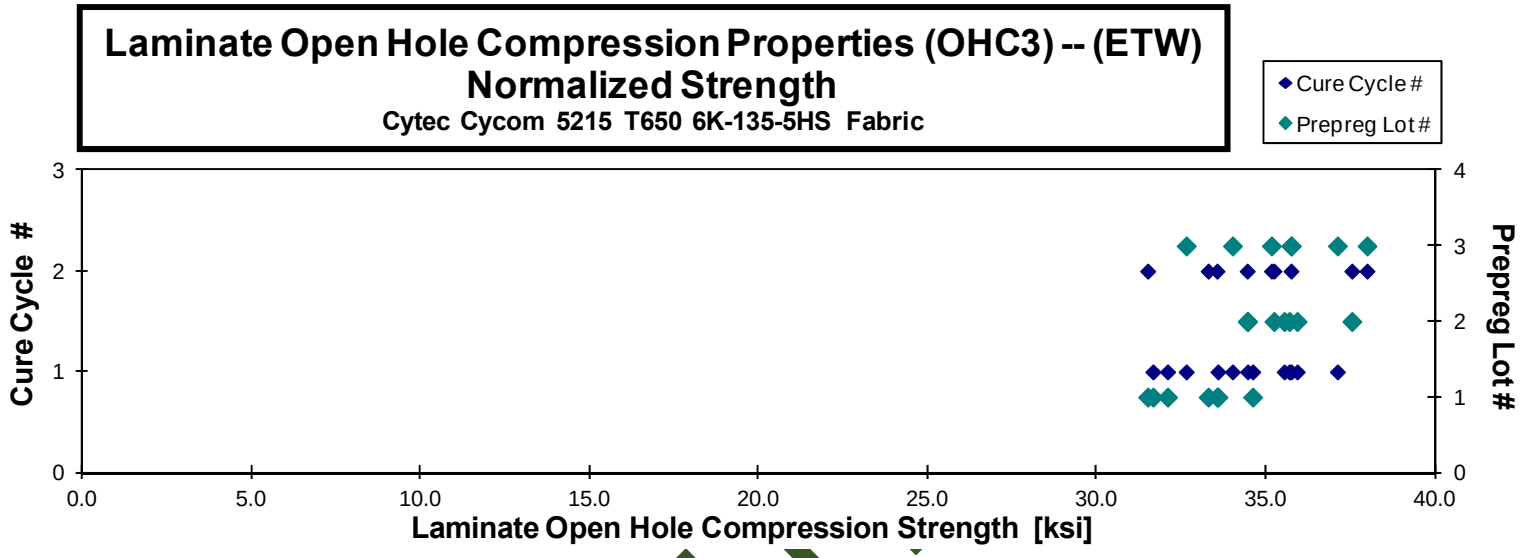
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EIA117M	A	C1	1	1	33.888	0.154	10	MGM	0.0154	33.579
C0EIA118M	A	C1	1	1	32.485	0.153	10	LGM	0.0153	32.087
C0EIA119M	A	C1	1	1	31.738	0.155	10	MGM	0.0155	31.656
C0EIA11AM	A	C1	1	1	34.818	0.154	10	MGM	0.0154	34.604
C0EIA216M	A	C2	1	2	34.114	0.152	10	LGM	0.0152	33.549
C0EIA217M	A	C2	1	2	33.778	0.153	10	MGM	0.0153	33.288
C0EIA218M	A	C2	1	2	31.702	0.154	10	LGM	0.0154	31.501
C0EIB116M	B	C1	2	1	35.534	0.156	10	LGM	0.0156	35.687
C0EIB117M	B	C1	2	1	34.103	0.157	10	LGM	0.0157	34.455
C0EIB118M	B	C1	2	1	35.157	0.157	10	LGM	0.0157	35.538
C0EIB119M	B	C1	2	1	35.406	0.157	10	LGM	0.0157	35.920
C0EIB217M	B	C2	2	2	34.921	0.153	10	LGM	0.0153	34.444
C0EIB218M	B	C2	2	2	37.926	0.153	10	LGM	0.0153	37.539
C0EIB219M	B	C2	2	2	35.712	0.153	10	LGM	0.0153	35.236
C0EIC116M	C	C1	3	1	33.610	0.157	10	MGM	0.0157	34.007
C0EIC117M	C	C1	3	1	35.372	0.157	10	LGM	0.0157	35.744
C0EIC118M	C	C1	3	1	32.465	0.156	10	LGM	0.0156	32.640
C0EIC119M	C	C1	3	1	36.689	0.157	10	MGM	0.0157	37.111
C0EIC216M	C	C2	3	2	39.222	0.150	10	MGM	0.0150	37.986
C0EIC217M	C	C2	3	2	35.772	0.152	10	LGM	0.0152	35.160
C0EIC218M	C	C2	3	2	36.460	0.152	10	MGM	0.0152	35.739

Average	34.803	
Standard Dev.	1.908	
Coeff. of Var. [%]	5.483	
Min.	31.702	
Max.	39.222	
Number of Spec.	21	

$Average_{norm}$	0.0154	34.641
$Standard\ Dev._{norm}$		1.819
$Coeff.\ of\ Var.\ [\%]_{norm}$		5.252
Min.	0.0150	31.501
Max.	0.0157	37.986
Number of Spec.		21


Laminate Open Hole Compression Properties (OHC3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

4.23 "25/50/25" Filled-Hole Compression 1 Properties (FHC1)

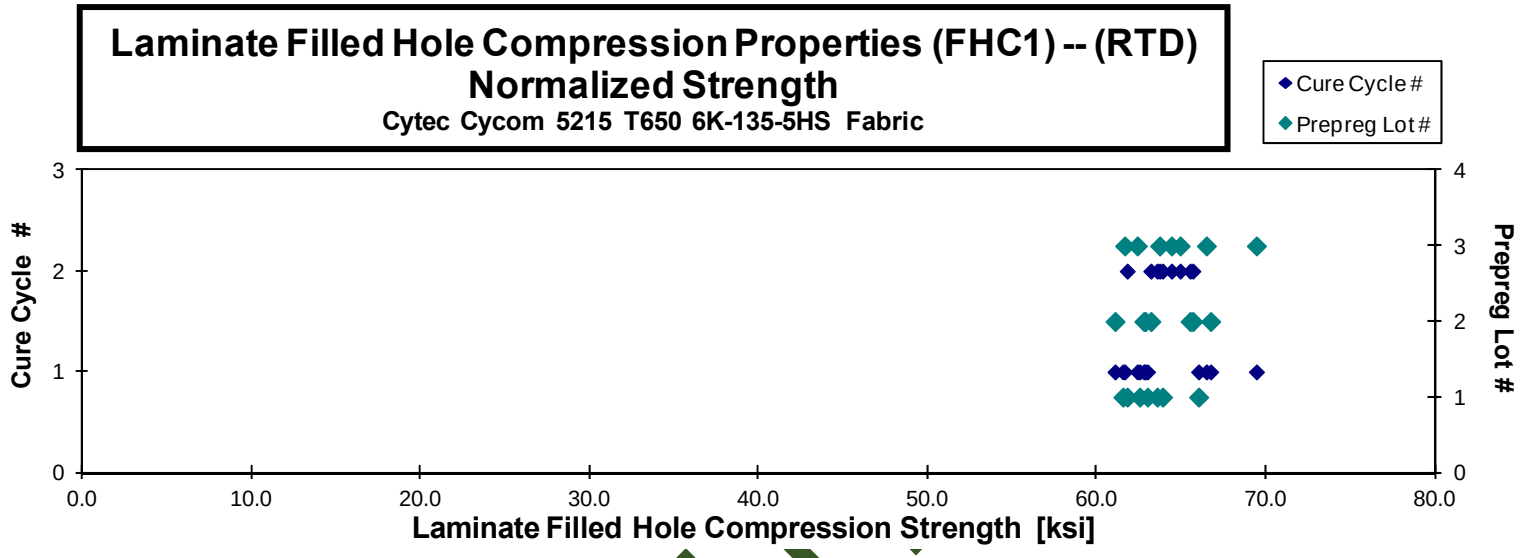
Laminate Filled Hole Compression Properties (FHC1) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]
0.0155

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]
C0E7A112A	A	C1	1	1	63.077	0.186	12	MGF	0.0155	62.987
C0E7A113A	A	C1	1	1	62.276	0.187	12	LGF	0.0156	62.527
C0E7A114A	A	C1	1	1	61.291	0.187	12	MGF	0.0156	61.538
C0E7A115A	A	C1	1	1	65.685	0.187	12	LGF	0.0156	66.014
C0E7A211A	A	C2	1	2	63.690	0.187	12	MGF	0.0155	63.878
C0E7A212A	A	C2	1	2	61.479	0.187	12	MGF	0.0156	61.793
C0E7A213A	A	C2	1	2	63.602	0.186	12	LGF	0.0155	63.562
C0E7B111A	B	C1	2	1	66.905	0.186	12	LGF	0.0155	66.725
C0E7B112A	B	C1	2	1	61.302	0.185	12	MGF	0.0154	61.071
C0E7B113A	B	C1	2	1	62.814	0.186	12	MGF	0.0155	62.774
C0E7B114A	B	C1	2	1	62.716	0.186	12	LGF	0.0155	62.856
C0E7B211A	B	C2	2	2	65.849	0.185	12	MGF	0.0154	65.512
C0E7B212A	B	C2	2	2	66.033	0.185	12	LGF	0.0154	65.672
C0E7B213A	B	C2	2	2	63.700	0.185	12	LGF	0.0154	63.186
C0E7C111A	C	C1	3	1	69.737	0.185	12	MGF	0.0154	69.431
C0E7C112A	C	C1	3	1	61.842	0.185	12	LGF	0.0155	61.643
C0E7C113A	C	C1	3	1	62.439	0.186	12	LGF	0.0155	62.389
C0E7C114A	C	C1	3	1	66.620	0.186	12	MGF	0.0155	66.471
C0E7C211A	C	C2	3	2	65.075	0.182	12	LGF	0.0152	63.710
C0E7C212A	C	C2	3	2	65.882	0.183	12	MGF	0.0153	64.919
C0E7C213A	C	C2	3	2	65.487	0.183	12	MGF	0.0152	64.413

Average	**64.167**	
Standard Dev.	**2.239**	
Coeff. of Var. [%]	**3.489**	
Min.	**61.291**	
Max.	**69.737**	
Number of Spec.	**21**	

$Average_{norm}$	**0.0155**	**63.956**
$Standard\ Dev._{norm}$		**2.095**
$Coeff.\ of\ Var.\ [\%]_{norm}$		**3.275**
Min.	**0.0152**	**61.071**
Max.	**0.0156**	**69.431**
Number of Spec.		**21**

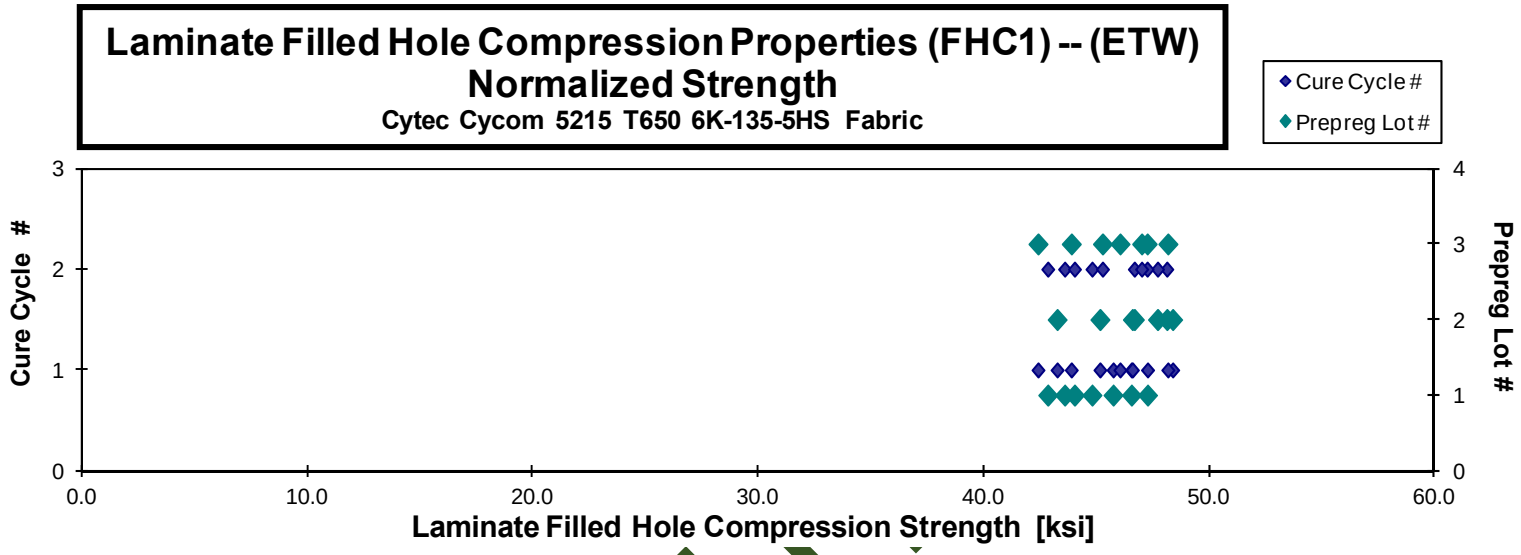

Laminate Filled Hole Compression Properties (FHC1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
0
1
2
3
4
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
Laminate Filled Hole Compression Strength [ksi]

Laminate Filled Hole Compression Properties (FHC1) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E7A11AM	A	C1	1	1	45.610	0.186	12	LGF	0.0155	45.716
C0E7A11BM	A	C1	1	1	46.296	0.187	12	LGF	0.0156	46.529
C0E7A11CM	A	C1	1	1	47.633	0.184	12	LGF	0.0154	47.244
C0E7A216M	A	C2	1	2	43.652	0.186	12	LGF	0.0155	43.566
C0E7A217M	A	C2	1	2	42.919	0.186	12	LGF	0.0155	42.819
C0E7A218M	A	C2	1	2	44.792	0.186	12	LGF	0.0155	44.780
C0E7A219M	A	C2	1	2	43.897	0.186	12	LGF	0.0155	44.003
C0E7B116M	B	C1	2	1	48.532	0.185	12	LGF	0.0154	48.358
C0E7B117M	B	C1	2	1	45.241	0.186	12	LGF	0.0155	45.132
C0E7B119M	B	C1	2	1	43.378	0.185	12	MGF	0.0154	43.234
C0E7B11AM	B	C1	2	1	46.831	0.185	12	LGF	0.0154	46.571
C0E7B216M	B	C2	2	2	46.849	0.185	12	LGF	0.0154	46.660
C0E7B217M	B	C2	2	2	48.584	0.184	12	LGF	0.0153	48.101
C0E7B218M	B	C2	2	2	47.789	0.186	12	LGF	0.0155	47.687
C0E7C116M	C	C1	3	1	43.875	0.186	12	LGF	0.0155	43.863
C0E7C117M	C	C1	3	1	42.428	0.186	12	MGF	0.0155	42.386
C0E7C118M	C	C1	3	1	46.293	0.185	12	MGF	0.0154	46.024
C0E7C119M	C	C1	3	1	48.237	0.186	12	MGF	0.0155	48.146
C0E7C217M	C	C2	3	2	47.849	0.184	12	LGF	0.0153	47.227
C0E7C218M	C	C2	3	2	46.058	0.183	12	LGF	0.0152	45.245
C0E7C219M	C	C2	3	2	47.338	0.185	12	LGF	0.0154	46.982

	Strength		$Strength_{norm}$
Average	45.909	$Average_{norm}$	45.727
Standard Dev.	1.954	$Standard\ Dev._{norm}$	1.859
Coeff. of Var. [%]	4.256	$Coeff.\ of\ Var.\ [\%]_{norm}$	4.065
Min.	42.428	Min.	42.386
Max.	48.584	Max.	48.358
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Compression Properties (FHC1) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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]

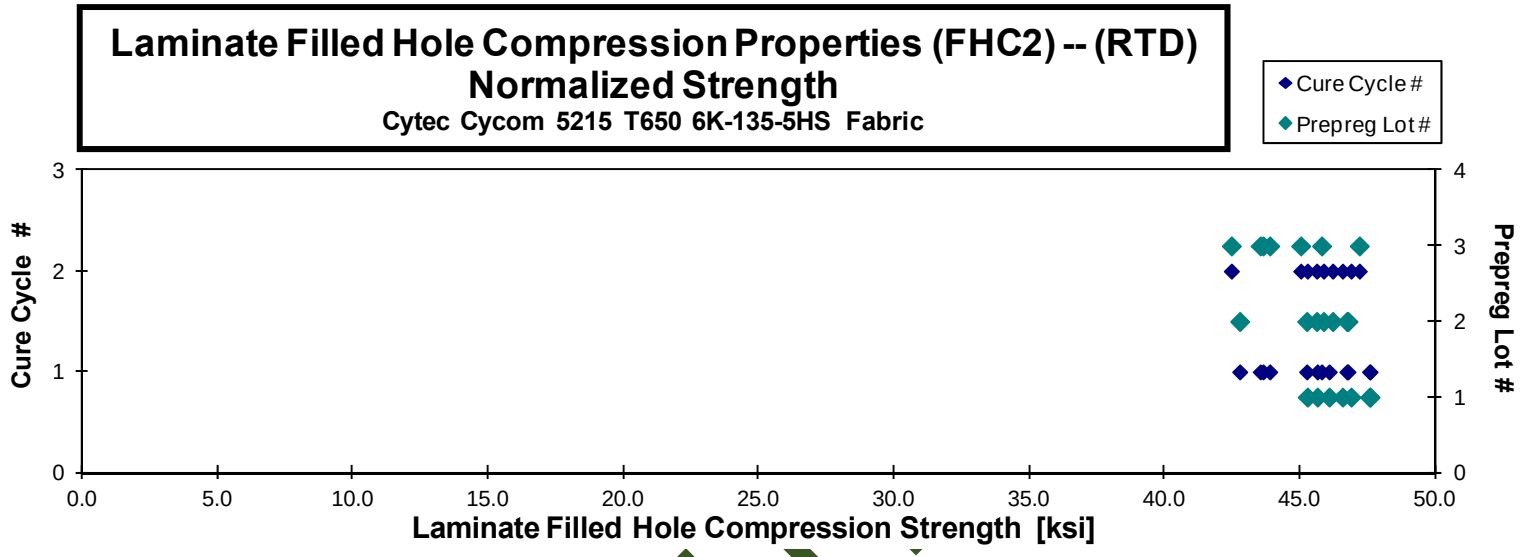
4.24 "10/80/10" Filled-Hole Compression 2 Properties (FHC2)

Laminate Filled Hole Compression Properties (FHC2) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E8A111A	A	C1	1	1	45.697	0.156	10	MGF	0.0156	46.085
C0E8A112A	A	C1	1	1	46.579	0.158	10	MGF	0.0158	47.580
C0E8A113A	A	C1	1	1	47.275	0.156	10	MGF	0.0156	47.595
C0E8A115A	A	C1	1	1	45.658	0.155	10	MGF	0.0155	45.643
C0E8A212A	A	C2	1	2	46.368	0.157	10	MGF	0.0157	46.891
C0E8A214A	A	C2	1	2	46.397	0.156	10	AGF	0.0156	46.576
C0E8A215A	A	C2	1	2	45.063	0.156	10	AGF	0.0156	45.276
C0E8B111A	B	C1	2	1	45.386	0.155	10	AGF	0.0155	45.255
C0E8B112A	B	C1	2	1	46.656	0.155	10	AGF	0.0155	46.741
C0E8B113A	B	C1	2	1	46.752	0.155	10	AGF	0.0155	46.777
C0E8B114A	B	C1	2	1	42.513	0.156	10	AGF	0.0156	42.778
C0E8B211A	B	C2	2	2	46.653	0.154	10	MGF	0.0154	46.211
C0E8B212A	B	C2	2	2	45.871	0.155	10	MGF	0.0155	45.876
C0E8B213A	B	C2	2	2	45.725	0.155	10	AGF	0.0155	45.622
C0E8C111A	C	C1	3	1	43.812	0.154	10	AGF	0.0154	43.642
C0E8C112A	C	C1	3	1	43.698	0.156	10	MGF	0.0156	43.886
C0E8C113A	C	C1	3	1	43.522	0.155	10	MGF	0.0155	43.536
C0E8C114A	C	C1	3	1	45.820	0.155	10	MGF	0.0155	45.805
C0E8C211A	C	C2	3	2	42.918	0.153	10	MGF	0.0153	42.470
C0E8C212A	C	C2	3	2	45.365	0.154	10	MGF	0.0154	45.033
C0E8C213A	C	C2	3	2	47.336	0.155	10	MGF	0.0155	47.198

	Strength [ksi]		$Strength_{norm}$ [ksi]
Average	45.479	$Average_{norm}$	45.547
Standard Dev.	1.408	$Standard\ Dev._{norm}$	1.513
Coeff. of Var. [%]	3.096	$Coeff.\ of\ Var.\ [\%]_{norm}$	3.322
Min.	42.513	Min.	42.470
Max.	47.336	Max.	47.595
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Compression Properties (FHC2) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Filled Hole Compression Strength [ksi]

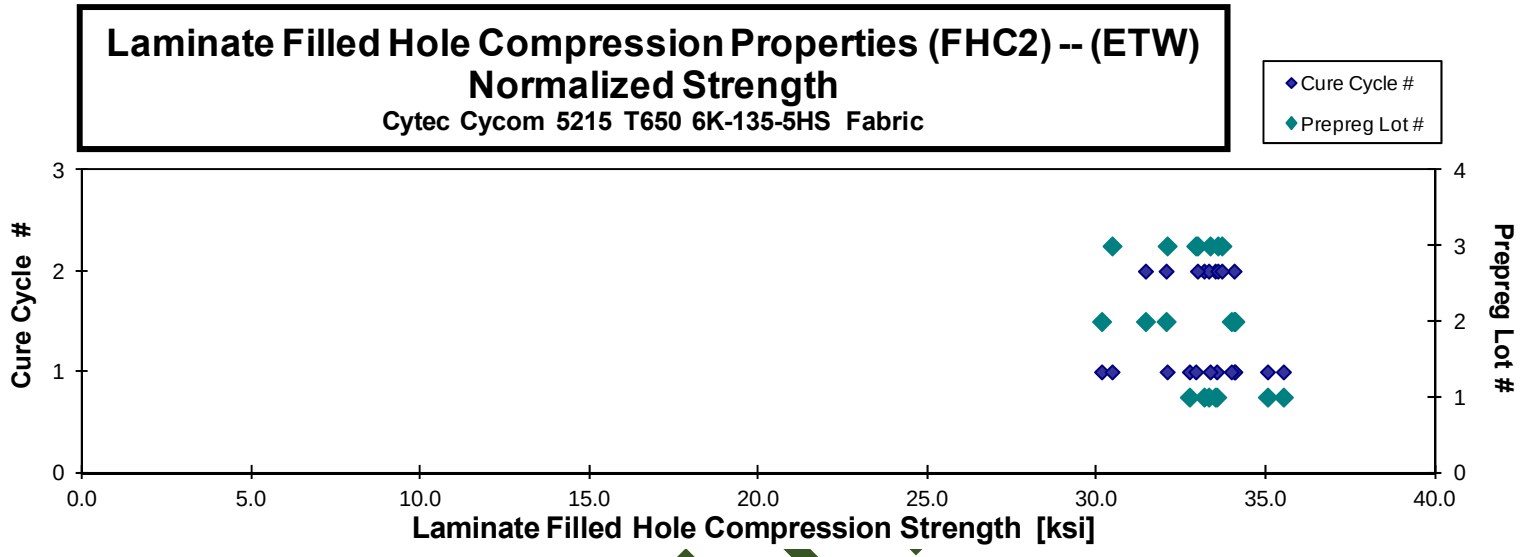
Laminate Filled Hole Compression Properties (FHC2) -- (ETW) Strength

Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E8A117M	A	C1	1	1	35.223	0.156	10	AGF	0.0156	35.514
C0E8A118M	A	C1	1	1	34.833	0.156	10	MGF	0.0156	35.043
C0E8A119M	A	C1	1	1	32.514	0.156	10	AGF	0.0156	32.734
C0E8A11AM	A	C1	1	1	33.418	0.156	10	AGF	0.0156	33.540
C0E8A217M	A	C2	1	2	33.262	0.156	10	AGF	0.0156	33.495
C0E8A218M	A	C2	1	2	33.184	0.155	10	AGF	0.0155	33.166
C0E8A219M	A	C2	1	2	33.035	0.156	10	MGF	0.0156	33.301
C0E8B116M	B	C1	2	1	30.079	0.155	10	MGF	0.0155	30.137
C0E8B117M	B	C1	2	1	34.108	0.155	10	AGF	0.0155	34.060
C0E8B118M	B	C1	2	1	33.859	0.156	10	AGF	0.0156	34.077
C0E8B119M	B	C1	2	1	33.904	0.155	10	MGF	0.0155	33.973
C0E8B216M	B	C2	2	2	32.443	0.153	10	AGF	0.0153	32.045
C0E8B217M	B	C2	2	2	34.400	0.153	10	MGF	0.0153	34.056
C0E8B218M	B	C2	2	2	31.343	0.155	10	AGF	0.0155	31.434
C0E8C115M	C	C1	3	1	33.524	0.154	10	AGF	0.0154	33.344
C0E8C116M	C	C1	3	1	32.819	0.155	10	AGF	0.0155	32.921
C0E8C117M	C	C1	3	1	30.138	0.157	10	AGF	0.0157	30.446
C0E8C118M	C	C1	3	1	31.904	0.156	10	MGF	0.0156	32.076
C0E8C216M	C	C2	3	2	33.931	0.153	10	AGF	0.0153	33.573
C0E8C217M	C	C2	3	2	33.183	0.154	10	MGF	0.0154	32.972
C0E8C218M	C	C2	3	2	34.045	0.153	10	AGF	0.0153	33.693

	Strength		$Strength_{norm}$
Average	33.102	$Average_{norm}$	33.124
Standard Dev.	1.353	$Standard\ Dev._{norm}$	1.325
Coeff. of Var. [%]	4.088	$Coeff.\ of\ Var.\ [\%]_{norm}$	4.000
Min.	30.079	Min.	30.137
Max.	35.223	Max.	35.514
Number of Spec.	21	Number of Spec.	21


Laminate Filled Hole Compression Properties (FHC2) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

4.25 "40/20/40" Filled-Hole Compression 3 Properties (FHC3)

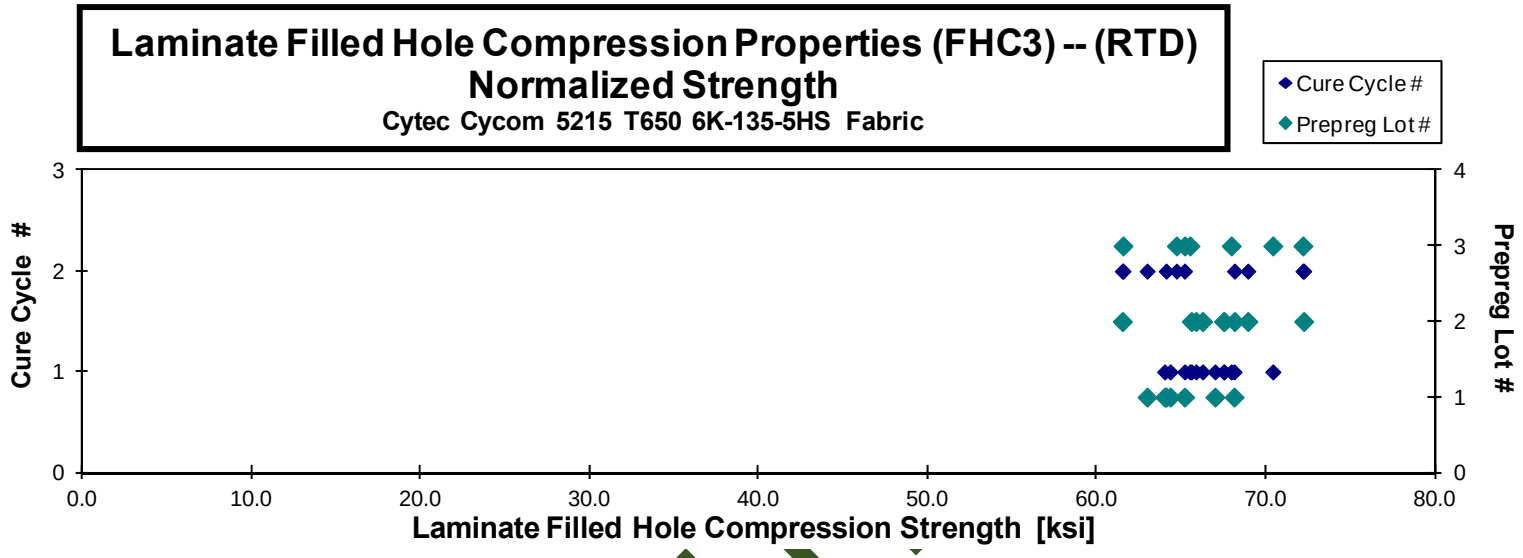
Laminate Filled Hole Compression Properties (FHC3) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E9A111A	A	C1	1	1	64.002	0.155	10	LGF	0.0155	64.002
C0E9A113A	A	C1	1	1	68.150	0.155	10	MGF	0.0155	68.113
C0E9A114A	A	C1	1	1	64.109	0.156	10	LGF	0.0156	64.336
C0E9A115A	A	C1	1	1	67.226	0.154	10	MGF	0.0154	66.981
C0E9A211A	A	C2	1	2	64.098	0.155	10	MGF	0.0155	64.091
C0E9A212A	A	C2	1	2	62.322	0.157	10	MGF	0.0157	62.966
C0E9A213A	A	C2	1	2	65.097	0.155	10	LGF	0.0155	65.181
C0E9B111A	B	C1	2	1	66.839	0.157	10	MGF	0.0157	67.500
C0E9B112A	B	C1	2	1	65.211	0.157	10	MGF	0.0157	65.856
C0E9B113A	B	C1	2	1	67.045	0.156	10	MGF	0.0156	67.506
C0E9B114A	B	C1	2	1	65.029	0.156	10	MGF	0.0156	65.581
C0E9B115A	B	C1	2	1	66.775	0.154	10	MGF	0.0154	66.244
C0E9B211A	B	C2	2	2	61.861	0.154	10	LGF	0.0154	61.502
C0E9B212A	B	C2	2	2	68.360	0.154	10	LGF	0.0154	68.133
C0E9B213A	B	C2	2	2	72.332	0.155	10	MGF	0.0155	72.231
C0E9B214A	B	C2	2	2	69.695	0.153	10	LGF	0.0153	68.923
C0E9C111A	C	C1	3	1	64.409	0.157	10	MGF	0.0157	65.184
C0E9C112A	C	C1	3	1	69.115	0.158	10	MGF	0.0158	70.401
C0E9C113A	C	C1	3	1	64.709	0.157	10	MGF	0.0157	65.502
C0E9C114A	C	C1	3	1	67.472	0.156	10	LGF	0.0156	67.943
C0E9C211A	C	C2	3	2	71.278	0.157	10	MGF	0.0157	72.183
C0E9C212A	C	C2	3	2	63.652	0.158	10	LGF	0.0158	64.699
C0E9C213A	C	C2	3	2	60.622	0.157	10	MGF	0.0157	61.541

Average	66.061	
Standard Dev.	2.941	
Coeff. of Var. [%]	4.453	
Min.	60.622	
Max.	72.332	
Number of Spec.	23	

$Average_{norm}$	0.0156	66.374
$Standard\ Dev._{norm}$		2.886
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.349
Min.	0.0153	61.502
Max.	0.0158	72.231
Number of Spec.		23


Laminate Filled Hole Compression Properties (FHC3) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Compression Strength [ksi]

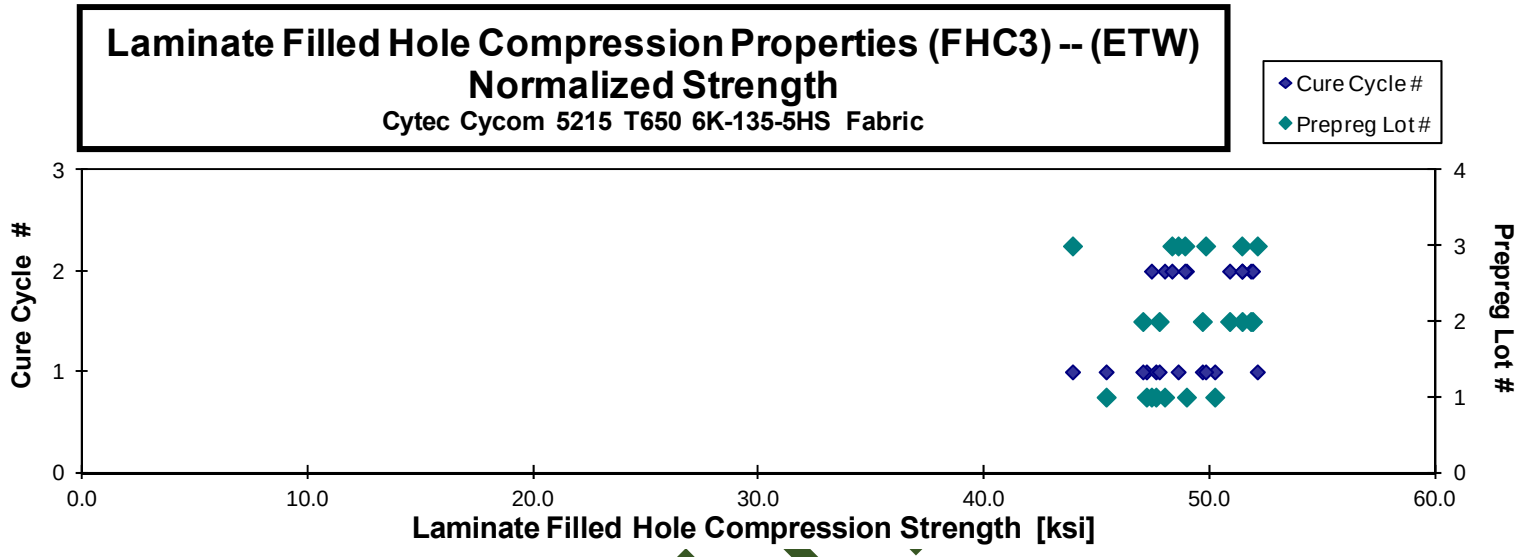
Laminate Filled Hole Compression Properties (FHC3) -- (ETW)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0E9A117M	A	C1	1	1	47.044	0.155	10	LGF	0.0155	47.191
C0E9A118M	A	C1	1	1	47.541	0.155	10	LGF	0.0155	47.613
C0E9A119M	A	C1	1	1	45.555	0.155	10	LGF	0.0155	45.408
C0E9A11AM	A	C1	1	1	50.095	0.155	10	LGF	0.0155	50.225
C0E9A216M	A	C2	1	2	47.498	0.155	10	LGF	0.0155	47.417
C0E9A217M	A	C2	1	2	48.892	0.155	10	LGF	0.0155	48.971
C0E9A218M	A	C2	1	2	47.534	0.157	10	LGF	0.0157	47.999
C0E9B116M	B	C1	2	1	49.083	0.157	10	LGF	0.0157	49.674
C0E9B117M	B	C1	2	1	47.155	0.157	10	LGF	0.0157	47.759
C0E9B118M	B	C1	2	1	46.993	0.155	10	LGF	0.0155	47.034
C0E9B216M	B	C2	2	2	51.405	0.155	10	LGF/LGO	0.0155	51.438
C0E9B217M	B	C2	2	2	52.364	0.153	10	LGF	0.0153	51.818
C0E9B218M	B	C2	2	2	52.236	0.154	10	LGF	0.0154	51.899
C0E9B219M	B	C2	2	2	51.717	0.153	10	LGF	0.0153	50.883
C0E9C116M	C	C1	3	1	48.197	0.156	10	LGF	0.0156	48.601
C0E9C117M	C	C1	3	1	43.295	0.157	10	LGF	0.0157	43.915
C0E9C118M	C	C1	3	1	49.151	0.157	10	LGF	0.0157	49.822
C0E9C119M	C	C1	3	1	51.984	0.155	10	LGF	0.0155	52.113
C0E9C216M	C	C2	3	2	47.944	0.156	10	LGF	0.0156	48.325
C0E9C218M	C	C2	3	2	48.547	0.156	10	LGF	0.0156	48.897
C0E9C219M	C	C2	3	2	50.966	0.156	10	LGF	0.0156	51.426

Average		48.819
Standard Dev.		2.371
Coeff. of Var. [%]		4.857
Min.		43.295
Max.		52.364
Number of Spec.		21

$Average_{norm}$	0.0156	48.973
$Standard\ Dev._{norm}$		2.208
$Coeff.\ of\ Var.\ [\%]_{norm}$		4.509
Min.	0.0153	43.915
Max.	0.0157	52.113
Number of Spec.		21


Laminate Filled Hole Compression Properties (FHC3) -- (ETW)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 "25/50/25" Single-Shear Bearing 1 Properties (SSB1)

Laminate Single Shear Bearing Properties (SSB1) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

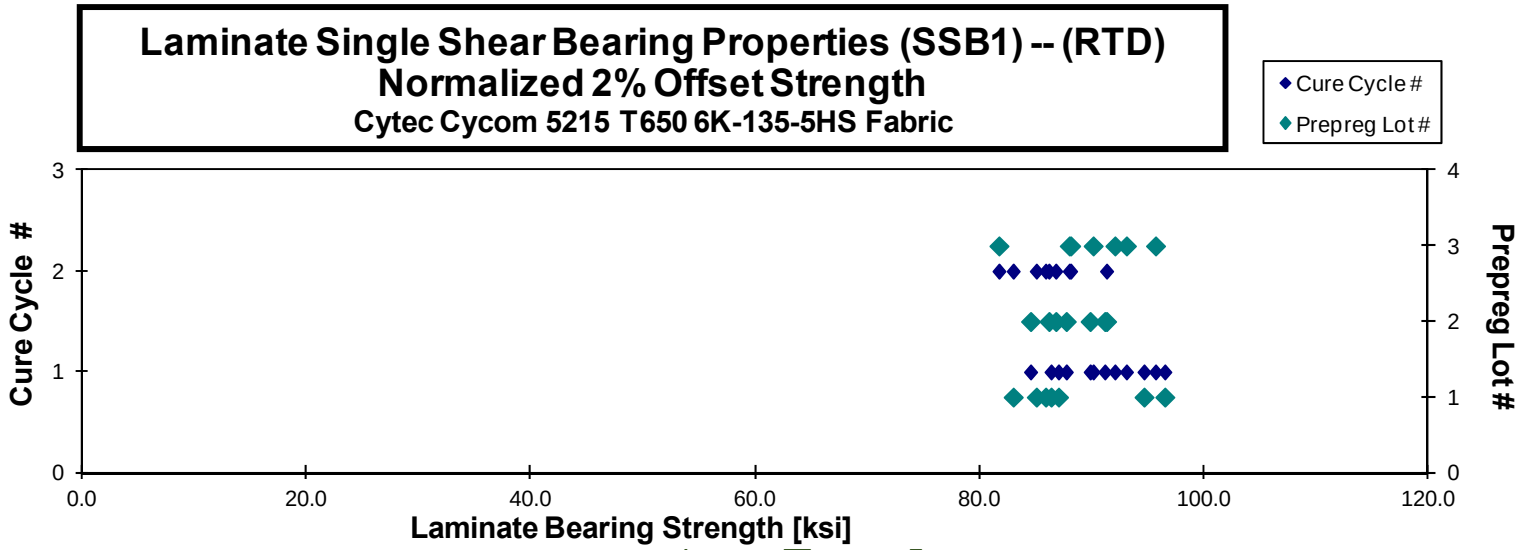
normalizing t_{ply} [in]: 0.0155

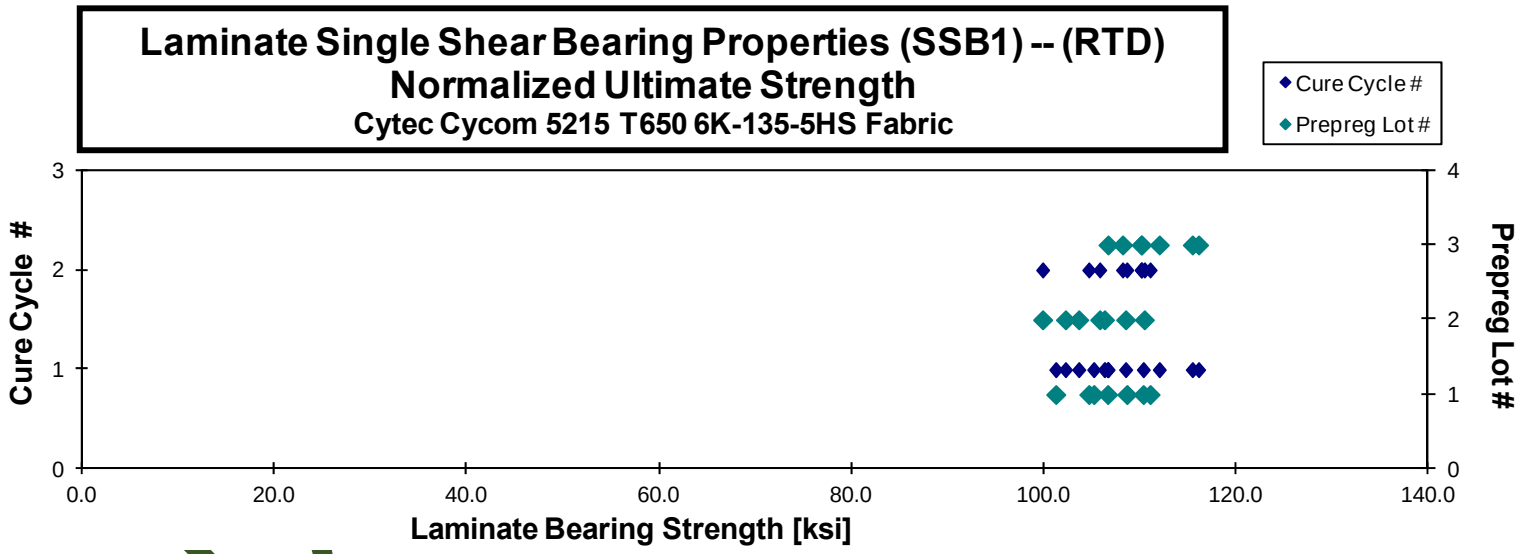
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset Strength$_{norm}$ [ksi]	Ultimate Strength$_{norm}$ [ksi]
C0E1A112A	A	C1	1	1	88.508	113.089	0.121	8	B1I	0.0151	86.307	110.277
C0E1A113A	A	C1	1	1	89.334	107.986	0.121	8	B1I	0.0151	86.968	105.127
C0E1A114A	A	C1	1	1	98.648	103.491	0.121	8	B1I	0.0152	96.447	101.181
C0E1A115A	A	C1	1	1	96.938	109.216	0.121	8	B1I	0.0151	94.593	106.574
C0E1A211A	A	C2	1	2	85.166	107.428	0.121	8	B1I	0.0151	82.934	104.613
C0E1A212A	A	C2	1	2	87.518	110.711	0.122	8	B1I	0.0152	85.824	108.568
C0E1A213A	A	C2	1	2	86.318	112.717	0.122	8	B1I	0.0153	84.996	110.990
C0E1B111A	B	C1	2	1	90.600	107.036	0.120	8	B1I	0.0150	87.665	103.569
C0E1B112A	B	C1	2	1	92.041	111.164	0.121	8	B1I	0.0151	89.789	108.445
C0E1B113A	B	C1	2	1	86.948	109.341	0.120	8	B1I	0.0151	84.482	106.240
C0E1B114A	B	C1	2	1	93.925	105.358	0.120	8	B1I	0.0150	91.097	102.186
C0E1B211A	B	C2	2	2	89.498	109.902	0.119	8	B1I	0.0149	86.117	105.751
C0E1B212A	B	C2	2	2	89.063	102.502	0.121	8	B1I	0.0151	86.729	99.815
C0E1B213A	B	C2	2	2	93.325	112.897	0.121	8	B1I	0.0152	91.255	110.393
C0E1C111A	C	C1	3	1	94.370	118.350	0.121	8	B1I	0.0151	91.998	115.375
C0E1C112A	C	C1	3	1	96.973	113.531	0.122	8	B1I	0.0153	95.617	111.944
C0E1C113A	C	C1	3	1	90.928	117.146	0.123	8	B1I	0.0154	90.060	116.028
C0E1C114A	C	C1	3	1	93.628	107.302	0.123	8	B1I	0.0154	93.024	106.610
C0E1C211A	C	C2	3	2	85.780	113.574	0.118	8	B1I	0.0148	81.664	108.124
C0E1C212A	C	C2	3	2	90.246	112.967	0.121	8	B1I	0.0151	87.929	110.067
C0E1C213A	C	C2	3	2	89.243	111.569	0.122	8	B1I	0.0153	88.056	110.084

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

Average	90.905	110.347	
Standard Dev.	3.828	4.061	
Coeff. of Var. [%]	4.211	3.680	
Min.	85.166	102.502	
Max.	98.648	118.350	
Number of Spec.	21	21	

Average$_{norm}$	0.0151	88.741	107.712
Standard Dev.$_{norm}$		4.070	4.245
Coeff. of Var. [%]$_{norm}$		4.587	3.941
Min.	0.0148	81.664	99.815
Max.	0.0154	96.447	116.028
Number of Spec.		21	21


Laminate Single Shear Bearing Properties (SSB1) -- (RTD)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Strength [ksi]


Laminate Single Shear Bearing Properties (SSB1) -- (RTD)
Normalized Ultimate Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Strength [ksi]

Laminate Single Shear Bearing Properties (SSB1) -- (ETW) Strength

Cytec Cycom 5215 T650 6K-135-5HS Fabric

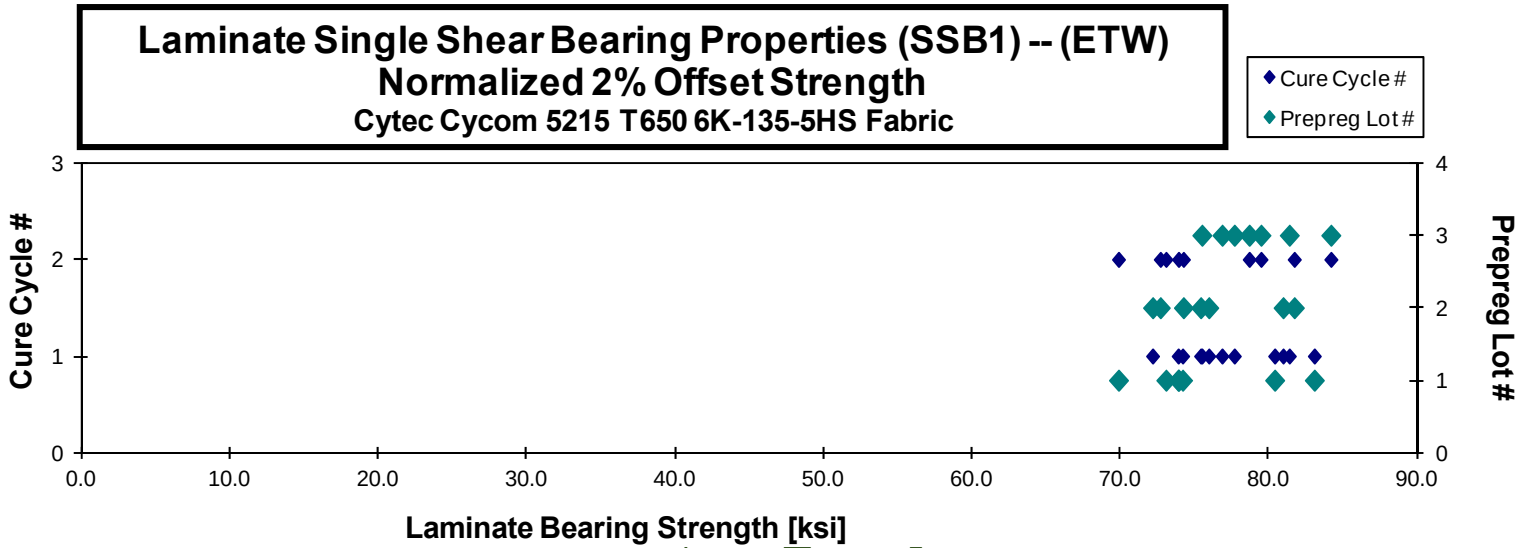
normalizing t_{ply} [in]: 0.0155

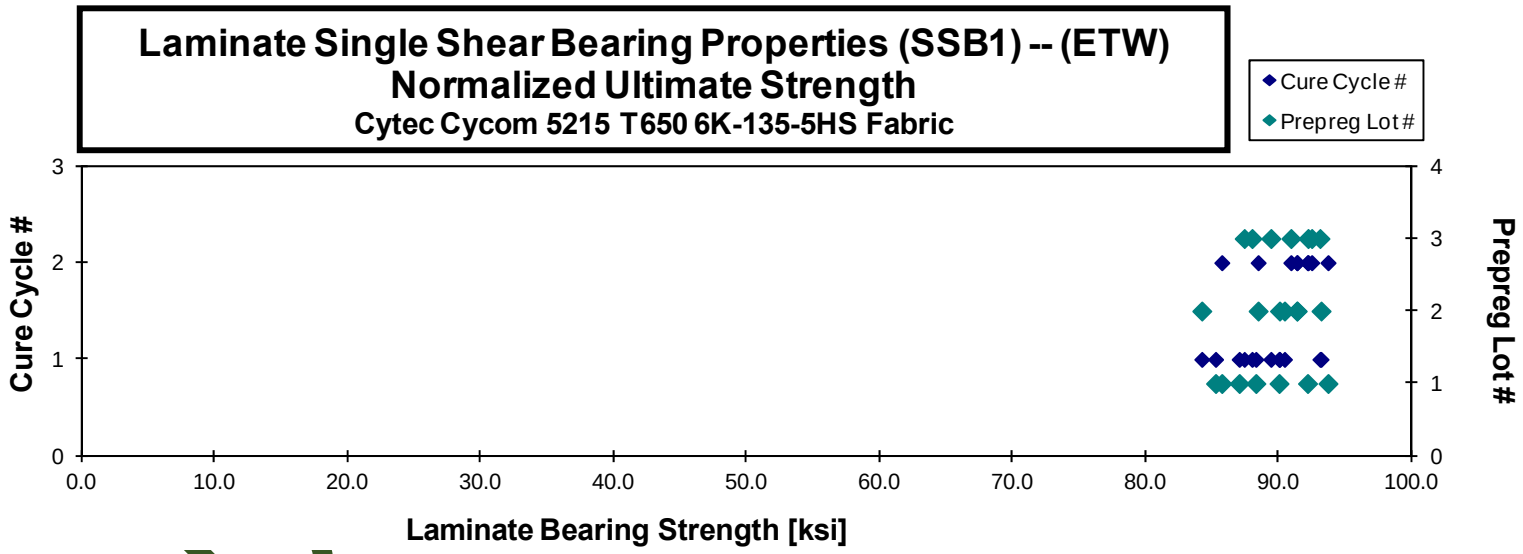
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset Strength$_{norm}$ [ksi]	Ultimate Strength$_{norm}$ [ksi]
C0E1A117M	A	C1	1	1	75.448	90.169	0.121	8	B1I1 / D1B2	0.0152	73.866	88.279
C0E1A118M	A	C1	1	1	82.143	88.953	0.121	8	B1I1 / D1B2	0.0152	80.365	87.028
C0E1A119M	A	C1	1	1	84.010	86.247	0.123	8	B1I	0.0153	83.039	85.250
C0E1A11AM	A	C1	1	1	75.615	91.784	0.122	8	B1I1 / D1B2	0.0152	74.161	90.020
C0E1A216M	A	C2	1	2	70.508	93.040	0.123	8	B1I1 / D1B2	0.0154	69.844	92.164
C0E1A217M	A	C2	1	2	74.439	94.402	0.123	8	B1I1 / D1B2	0.0154	73.889	93.704
C0E1A218M	A	C2	1	2	72.483	85.069	0.125	8	B1I1 / D1B2	0.0156	73.038	85.721
C0E1B116M	B	C1	2	1	74.341	92.801	0.120	8	B1I	0.0150	72.143	90.057
C0E1B117M	B	C1	2	1	76.163	90.708	0.124	8	B1I	0.0155	75.927	90.428
C0E1B118M	B	C1	2	1	81.802	94.182	0.123	8	B1I	0.0153	80.934	93.182
C0E1B119M	B	C1	2	1	76.901	85.913	0.122	8	B1I1 / D1B2	0.0152	75.382	84.216
C0E1B216M	B	C2	2	2	74.907	94.187	0.120	8	B1I1 / D1B2	0.0150	72.662	91.364
C0E1B217M	B	C2	2	2	75.382	92.812	0.122	8	B1I	0.0153	74.217	91.378
C0E1B218M	B	C2	2	2	82.655	89.496	0.123	8	B1I1 / D1B2	0.0153	81.688	88.450
C0E1C116M	C	C1	3	1	77.941	90.710	0.122	8	B1I1 / D1B2	0.0153	76.821	89.406
C0E1C117M	C	C1	3	1	77.617	87.371	0.124	8	B1I	0.0155	77.648	87.406
C0E1C118M	C	C1	3	1	81.090	92.798	0.124	8	B1I1 / D1B2	0.0156	81.352	93.097
C0E1C119M	C	C1	3	1	75.313	87.809	0.124	8	B1I	0.0155	75.464	87.986
C0E1C216M	C	C2	3	2	81.045	94.059	0.122	8	B1I1 / D1B2	0.0152	79.444	92.200
C0E1C217M	C	C2	3	2	79.129	91.469	0.123	8	B1I1 / D1B2	0.0154	78.650	90.916
C0E1C218M	C	C2	3	2	83.691	91.970	0.125	8	B1I	0.0156	84.153	92.477

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

	2% Offset Strength [ksi]	Ultimate Strength [ksi]
Average	77.744	90.760
Standard Dev.	3.832	2.815
Coeff. of Var. [%]	4.929	3.212
Min.	70.508	85.069
Max.	84.010	94.402
Number of Spec.	21	21

	Avg. t_{ply} [in]	2% Offset Strength$_{norm}$ [ksi]	Ultimate Strength$_{norm}$ [ksi]
Average$_{norm}$	0.0153	76.890	89.749
Standard Dev.$_{norm}$		3.968	2.759
Coeff. of Var. [%]$_{norm}$		5.161	3.074
Min.	0.0150	69.844	84.216
Max.	0.0156	84.153	93.704
Number of Spec.		21	21


Laminate Single Shear Bearing Properties (SSB1) -- (ETW)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Bearing Strength [ksi]


Laminate Single Shear Bearing Properties (SSB1) -- (ETW)
Normalized Ultimate Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Bearing Strength [ksi]

4.27 "10/80/10" Single-Shear Bearing 2 Properties (SSB2)

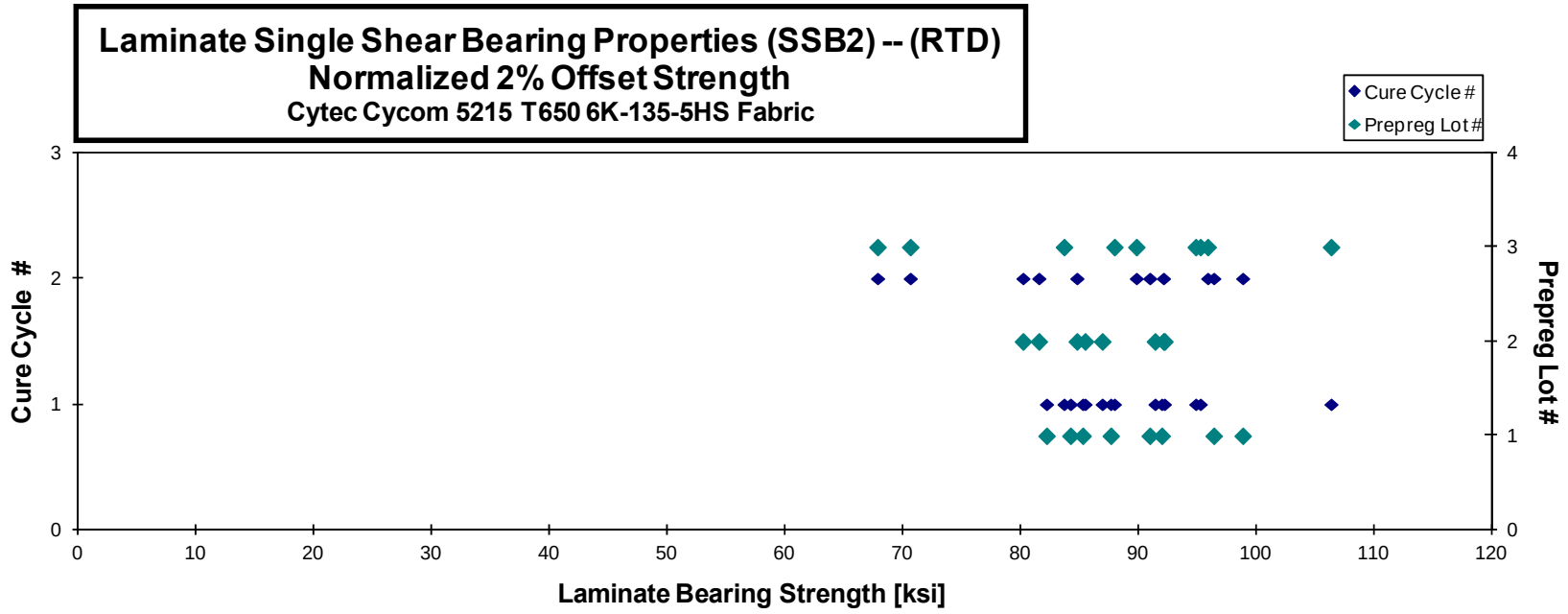
Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

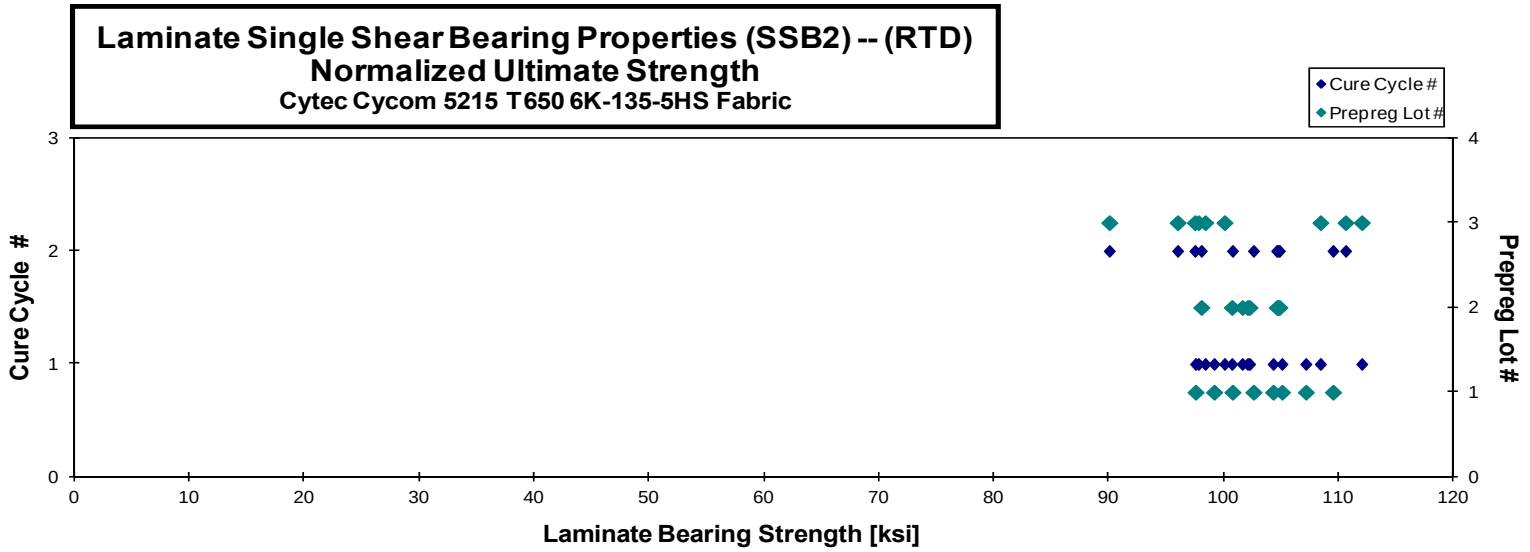
normalizing t_{ply} [in]: 0.0155

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 Strength$_{norm}$ [ksi]	Ultimate Strength$_{norm}$ [ksi]
C0E2A111A	A	C1	1	1	88.664	101.377	0.075	5	B1I	0.0149	85.308	97.540
C0E2A112A	A	C1	1	1	85.542	106.642	0.076	5	B1I	0.0153	84.273	105.060
C0E2A113A	A	C1	1	1	89.461	101.149	0.076	5	B1I	0.0152	87.691	99.148
C0E2A114A	A	C1	1	1	92.056	104.336	0.077	5	B1I	0.0155	92.016	104.291
C0E2A115A	A	C1	1	1	83.298	108.512	0.077	5	B1I	0.0153	82.242	107.136
C0E2A211A	A	C2	1	2	92.232	102.118	0.076	5	B1I	0.0153	91.002	100.756
C0E2A212A	A	C2	1	2	98.154	101.807	0.078	5	B1I	0.0156	98.893	102.573
C0E2A213A	A	C2	1	2	95.754	108.725	0.078	5	B1I	0.0156	96.433	109.496
C0E2B111A	B	C1	2	1	90.672	105.936	0.074	5	B1I	0.0149	86.967	101.607
C0E2B112A	B	C1	2	1	94.854	106.044	0.075	5	B1I	0.0149	91.448	102.235
C0E2B113A	B	C1	2	1	95.070	105.186	0.075	5	B1I	0.0150	92.248	102.064
C0E2B114A	B	C1	2	1	87.291	102.794	0.076	5	B1I	0.0152	85.507	100.693
C0E2B212A	B	C2	2	2	87.743	108.447	0.075	5	B1I	0.0150	84.818	104.832
C0E2B213A	B	C2	2	2	81.896	100.059	0.076	5	B1I	0.0152	80.240	98.036
C0E2B214A	B	C2	2	2	83.637	107.340	0.076	5	B1I	0.0151	81.586	104.709
C0E2B215A	B	C2	2	2	94.478	107.230	0.076	5	B1I	0.0151	92.162	104.601
C0E2C111A	C	C1	3	1	84.856	101.405	0.076	5	B1I	0.0153	83.725	100.053
C0E2C112A	C	C1	3	1	94.640	98.102	0.078	5	B1I	0.0155	94.905	98.377
C0E2C113A	C	C1	3	1	94.766	97.248	0.078	5	B1I	0.0156	95.296	97.792
C0E2C114A	C	C1	3	1	86.588	106.660	0.079	5	B1I	0.0158	88.003	108.404
C0E2C115A	C	C1	3	1	104.948	110.482	0.079	5	B1I	0.0157	106.392	112.003
C0E2C211A	C	C2	3	2	93.905	101.862	0.074	5	B1I	0.0148	89.866	97.481
C0E2C212A	C	C2	3	2	69.128	91.670	0.076	5	B1I	0.0152	67.894	90.033
C0E2C213A	C	C2	3	2	71.956	97.721	0.076	5	B1I	0.0152	70.671	95.976
C0E2C214A	C	C2	3	2	97.281	112.159	0.076	5	B1I	0.0153	95.921	110.591

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

Average	89.555	103.800	Average$_{norm}$	0.0153	88.220	102.219
Standard Dev.	7.891	4.737	Standard Dev.$_{norm}$		8.322	5.062
Coeff. of Var. [%]	8.811	4.564	Coeff. of Var. [%]$_{norm}$		9.434	4.952
Min.	69.128	91.670	Min.	0.0148	67.894	90.033
Max.	104.948	112.159	Max.	0.0158	106.392	112.003
Number of Spec.	25	25	Number of Spec.		25	25


Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
0
1
2
3
4


Laminate Single Shear Bearing Properties (SSB2) -- (RTD)
Normalized Ultimate Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
120
0
1
2
3
4

Laminate Single Shear Bearing Properties (SSB2) -- (ETW) Strength

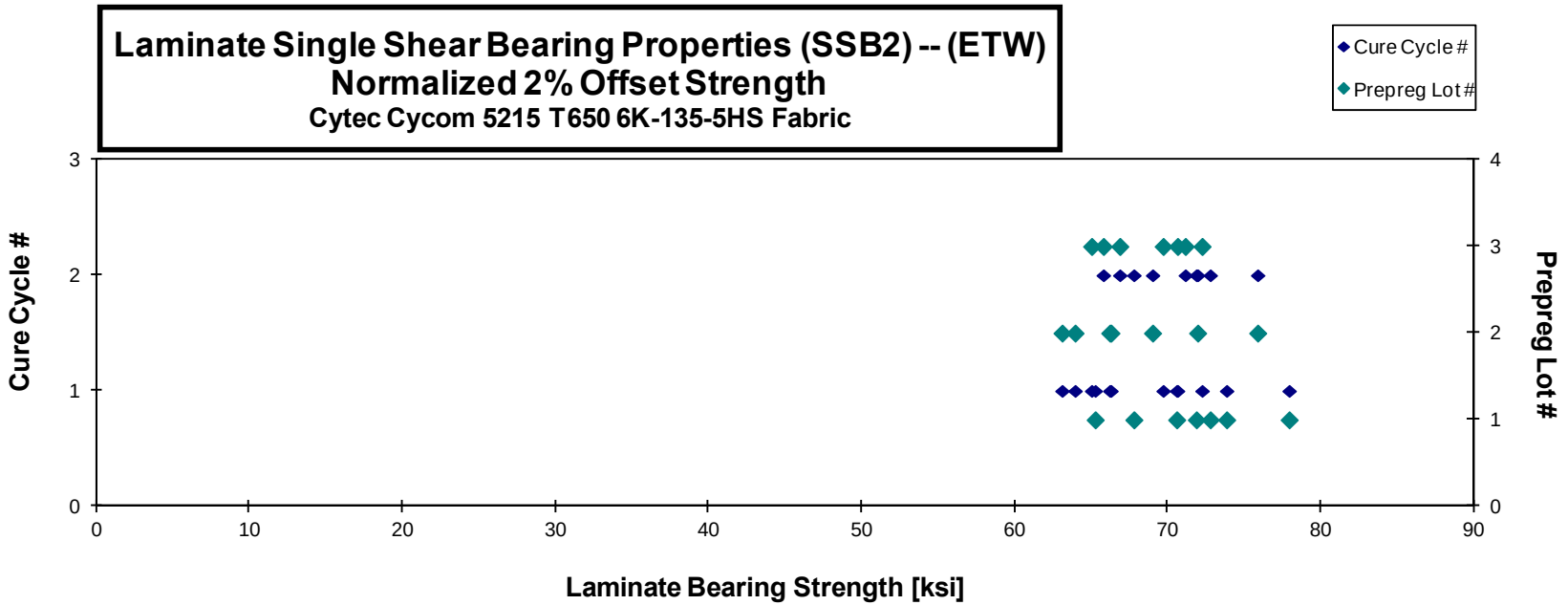
Cytec Cycom 5215 T650 6K-135-5HS Fabric

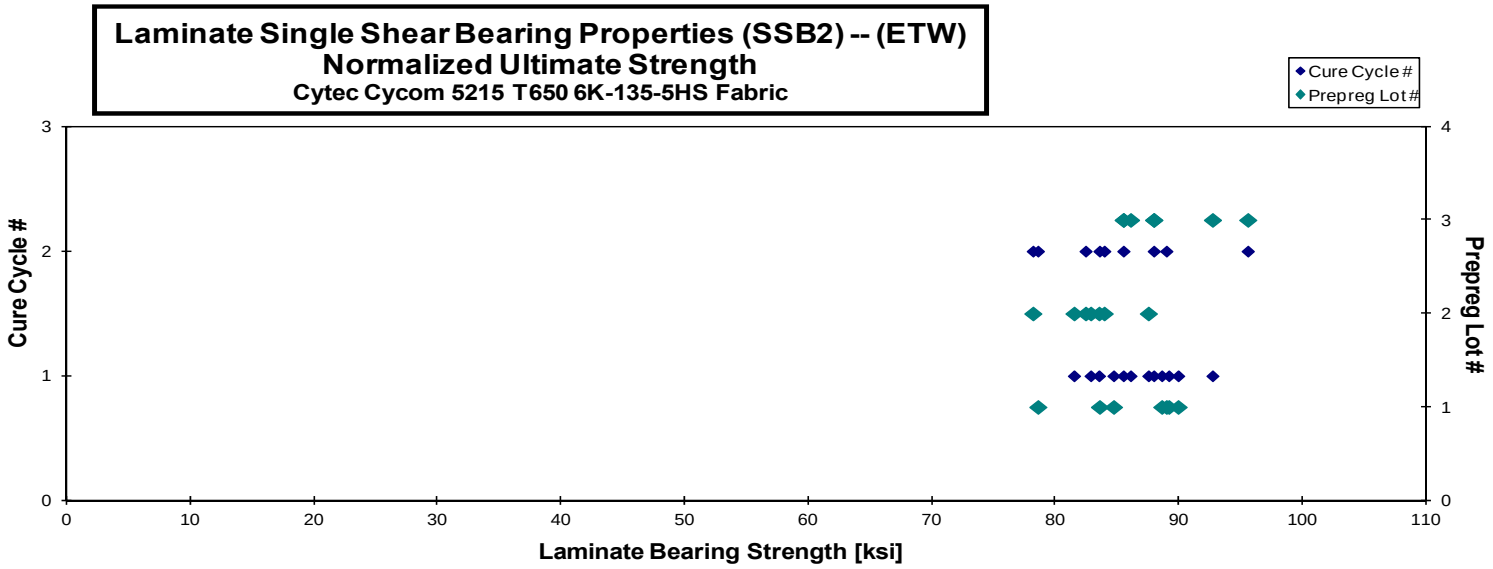
normalizing t_{ply} [in]: 0.0155

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 $Strength_{norm}$ [ksi]	Ultimate $Strength_{norm}$ [ksi]
C0E2A117M	A	C1	1	1	65.307	88.726	0.077	5	B1I	0.0155	65.265	88.668
C0E2A118M	A	C1	1	1	72.452	87.541	0.079	5	B1I	0.0158	73.854	89.235
C0E2A119M	A	C1	1	1	76.316	82.999	0.079	5	B1I	0.0158	77.940	84.766
C0E2A11AM	A	C1	1	1	68.312	87.090	0.080	5	B1I	0.0160	70.589	89.993
C0E2A216M	A	C2	1	2	69.250	80.337	0.076	5	B1I	0.0152	67.791	78.644
C0E2A217M	A	C2	1	2	71.983	89.172	0.077	5	B1I	0.0155	71.875	89.038
C0E2A218M	A	C2	1	2	73.433	84.373	0.077	5	B1I	0.0154	72.785	83.629
C0E2B116M	B	C1	2	1	64.542	85.498	0.076	5	B1I	0.0152	63.099	83.586
C0E2B117M	B	C1	2	1	67.512	84.439	0.076	5	B1I	0.0152	66.293	82.914
C0E2B118M	B	C1	2	1	66.345	87.754	0.077	5	B1I	0.0155	66.217	87.584
C0E2B119M	B	C1	2	1	64.293	82.008	0.077	5	B1I	0.0154	63.948	81.567
C0E2B216M	B	C2	2	2	71.173	86.638	0.075	5	B1I	0.0150	69.015	84.011
C0E2B217M	B	C2	2	2	72.712	79.057	0.077	5	B1I	0.0153	71.962	78.241
C0E2B218M	B	C2	2	2	77.161	83.892	0.076	5	B1I	0.0152	75.883	82.503
C0E2C116M	C	C1	3	1	67.259	89.094	0.075	5	B1I	0.0150	65.032	86.144
C0E2C117M	C	C1	3	1	71.426	90.189	0.076	5	B1I	0.0151	69.705	88.016
C0E2C118M	C	C1	3	1	71.399	93.760	0.077	5	B1I	0.0153	70.646	92.772
C0E2C119M	C	C1	3	1	72.436	85.777	0.077	5	B1I	0.0155	72.249	85.556
C0E2C216M	C	C2	3	2	65.277	84.888	0.078	5	B1I	0.0156	65.797	85.563
C0E2C217M	C	C2	3	2	70.411	87.104	0.078	5	B1I	0.0157	71.153	88.022
C0E2C218M	C	C2	3	2	66.331	94.854	0.078	5	B1I	0.0156	66.873	95.629

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

Average	69.778	86.438	$Average_{norm}$	0.0154	69.427	86.004
Standard Dev.	3.750	3.897	$Standard\ Dev._{norm}$		4.004	4.272
Coeff. of Var. [%]	5.375	4.508	Coeff. of Var. $[\%]_{norm}$		5.768	4.967
Min.	64.293	79.057	Min.	0.0150	63.099	78.241
Max.	77.161	94.854	Max.	0.0160	77.940	95.629
Number of Spec.	21	21	Number of Spec.		21	21


Laminate Single Shear Bearing Properties (SSB2) -- (ETW)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing Strength [ksi]
0
10
20
30
40
50
60
70
80
90
0
1
2
3
4


Laminate Single Shear Bearing Properties (SSB2) -- (ETW)
Normalized Ultimate Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Prepreg Lot #
Cure Cycle #
Prepreg Lot #
Laminate Bearing Strength [ksi]
0
10
20
30
40
50
60
70
80
90
100
110
0
1
2
3
4

4.28 "40/20/40" Single-Shear Bearing 3 Properties (SSB3)

Laminate Single Shear Bearing Properties (SSB3) -- (RTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

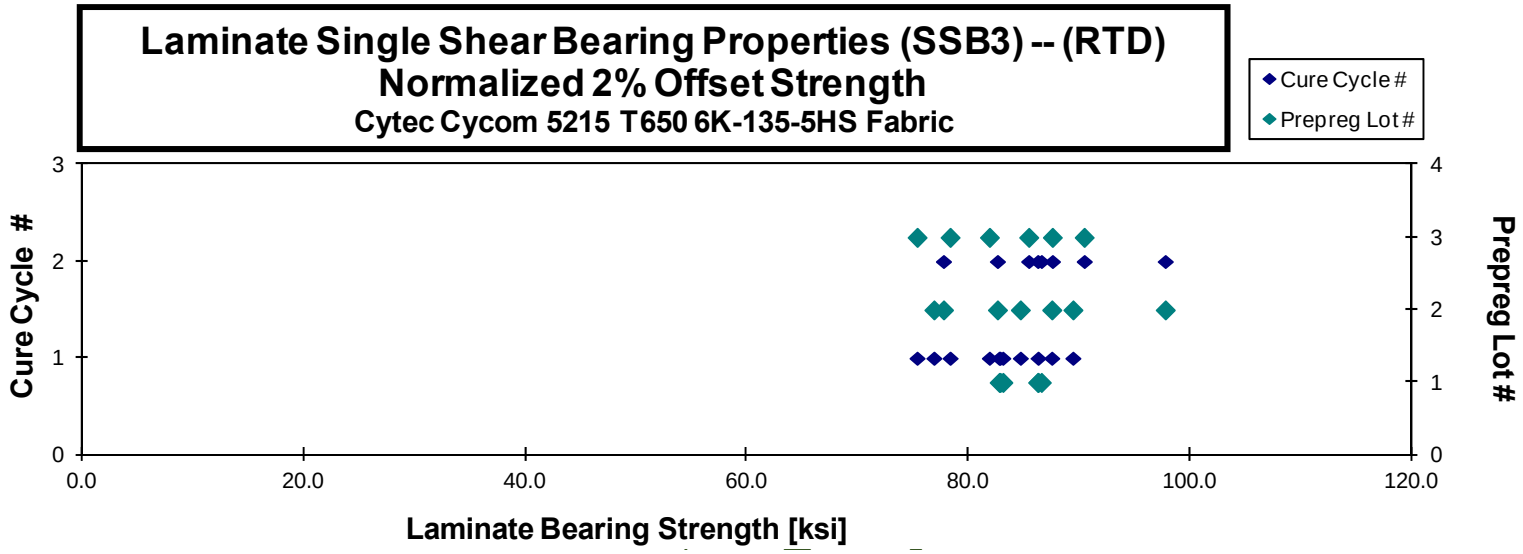
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Cure Cycle #	2% Offset Strength [ksi]	Ultimate Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Comments	Avg. t_{ply} [in]	2% Offset Strength$_{norm}$ [ksi]	Ultimate Strength$_{norm}$ [ksi]
C0E3A111A	A	C1	1	1	85.157	100.300	0.076	5	B1I	0.0151	83.106	97.884
C0E3A112A	A	C1	1	1	84.036	97.941	0.076	5	B1I	0.0153	82.861	96.572
C0E3A113A	A	C1	1	1	87.720	98.164	0.076	5	B1I	0.0152	86.286	96.560
C0E3A114A	A	C1	1	1	83.061	97.481	0.077	5	B1I	0.0154	82.776	97.146
C0E3A211A	A	C2	1	2	88.968	95.309	0.075	5	B1I	0.0151	86.576	92.747
C0E3A212A	A	C2	1	2	*	90.615	0.076	5	B1I	0.0152		89.114
C0E3A213A	A	C2	1	2	87.844	92.286	0.076	5	B1I	0.0152	86.257	90.618
C0E3B111A	B	C1	2	1	80.433	98.811	0.074	5	B1I	0.0148	76.887	94.454
C0E3B112A	B	C1	2	1	89.427	92.044	0.076	5	B1I	0.0152	87.523	90.084
C0E3B113A	B	C1	2	1	86.433	97.610	0.076	5	B1I	0.0152	84.686	95.637
C0E3B114A	B	C1	2	1	91.496	102.046	0.076	5	B1I	0.0152	89.430	99.742
C0E3B211A	B	C2	2	2	81.008	95.231	0.074	5	B1I	0.0149	77.750	91.402
C0E3B212A	B	C2	2	2	101.540	102.270	0.075	5	B1I	0.0149	97.762	98.465
C0E3B213A	B	C2	2	2	85.869	101.660	0.075	5	B1I	0.0149	82.619	97.812
C0E3C111A	C	C1	3	1	*	100.482	0.075	5	B1I	0.0149		96.895
C0E3C112A	C	C1	3	1	76.756	98.229	0.076	5	B1I	0.0152	75.369	96.454
C0E3C113A	C	C1	3	1	83.748	103.331	0.076	5	B1I	0.0152	81.893	101.042
C0E3C114A	C	C1	3	1	79.999	92.205	0.076	5	B1I	0.0152	78.347	90.302
C0E3C211A	C	C2	3	2	88.527	93.379	0.075	5	B1I	0.0150	85.443	90.126
C0E3C212A	C	C2	3	2	88.432	100.583	0.077	5	B1I	0.0154	87.576	99.610
C0E3C213A	C	C2	3	2	91.892	95.925	0.076	5	B1I	0.0153	90.449	94.419

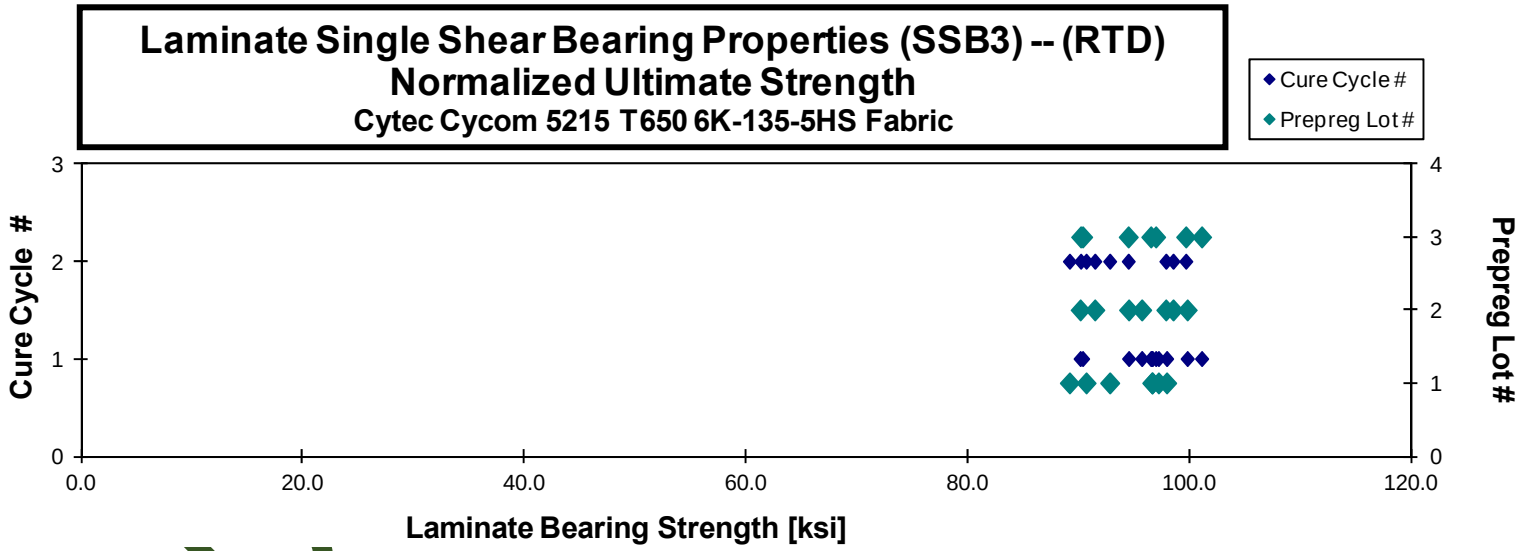
*2% Offset Strength not reported because Max load occurred before 2% offset

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

Average	86.439	97.424	
Standard Dev.	5.466	3.779	
Coeff. of Var. [%]	6.324	3.878	
Min.	76.756	90.615	
Max.	101.540	103.331	
Number of Spec.	19	21	

Average$_{norm}$	0.0151	84.400	95.099
Standard Dev.$_{norm}$		5.313	3.650
Coeff. of Var. [%]$_{norm}$		6.296	3.838
Min.	0.0148	75.369	89.114
Max.	0.0154	97.762	101.042
Number of Spec.		19	21


Laminate Single Shear Bearing Properties (SSB3) -- (RTD)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Strength [ksi]


Laminate Single Shear Bearing Properties (SSB3) -- (RTD)
Normalized Ultimate Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Strength [ksi]

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

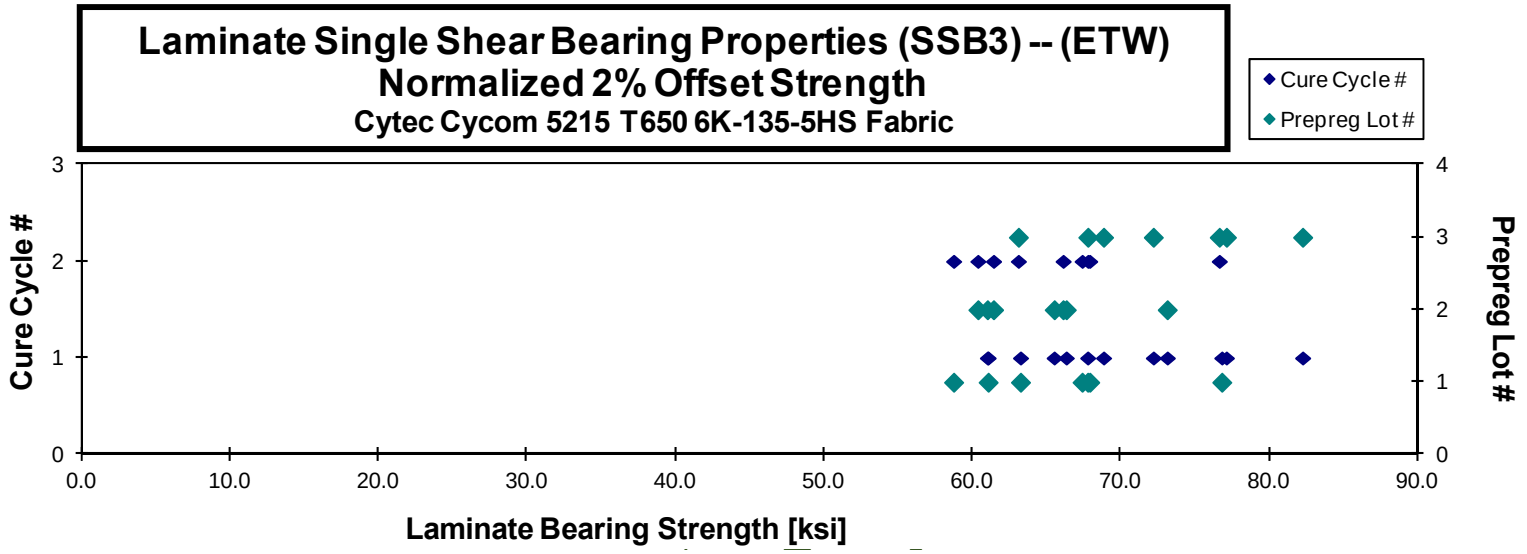
Cytec Cycom 5215 T650 6K-135-5HS Fabric

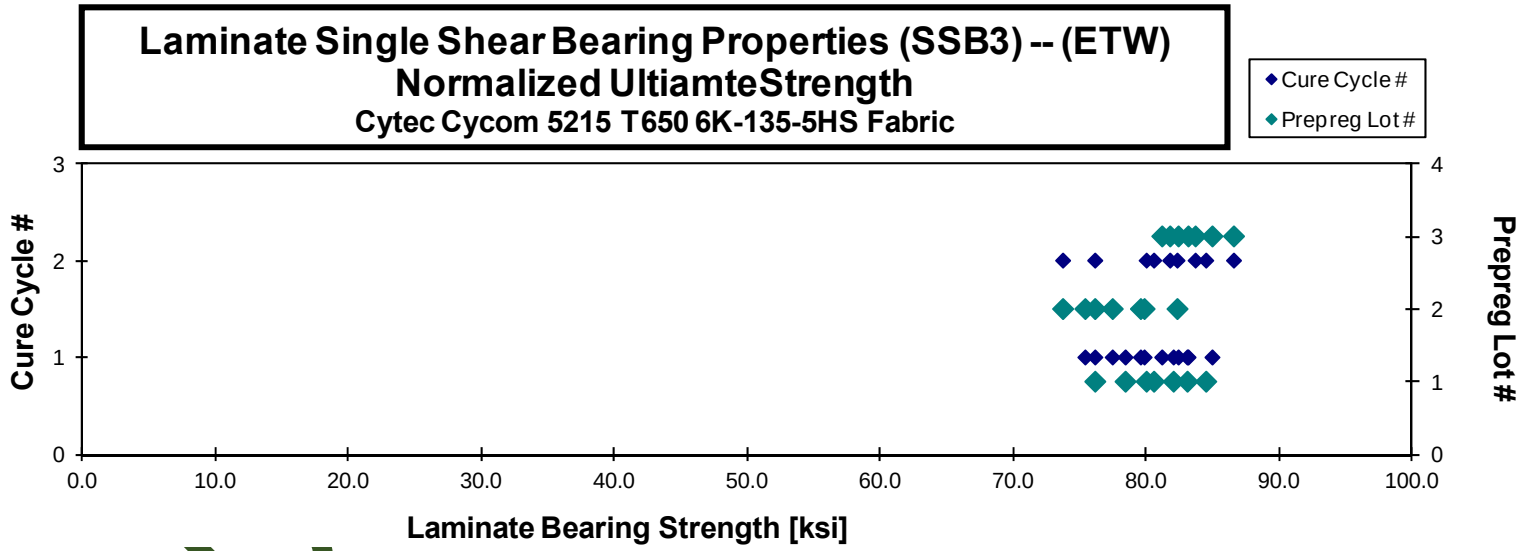
normalizing t_{ply} [in]: 0.0155

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 $Strength_{norm}$ [ksi]	Ultimate $Strength_{norm}$ [ksi]
C0E3A117M	A	C1	1	1	60.503	75.472	0.078	5	B1I	0.0156	60.062	76.170
C0E3A118M	A	C1	1	1	75.713	80.901	0.079	5	B1I	0.0157	76.804	82.066
C0E3A119M	A	C1	1	1	61.794	81.203	0.079	5	B1I	0.0159	63.243	83.107
C0E3A11AM	A	C1	1	1	66.892	77.432	0.079	5	B1I	0.0157	67.770	78.447
C0E3A216M	A	C2	1	2	67.878	84.474	0.078	5	B1I	0.0155	67.907	84.510
C0E3A217M	A	C2	1	2	57.816	78.779	0.079	5	B1I	0.0157	58.736	80.032
C0E3A218M	A	C2	1	2	66.155	79.111	0.079	5	B1I	0.0158	67.393	80.591
C0E3B116M	B	C1	2	1	62.794	79.746	0.075	5	B1I	0.0151	61.012	77.482
C0E3B117M	B	C1	2	1	72.878	79.326	0.078	5	B1I	0.0156	73.129	79.599
C0E3B118M	B	C1	2	1	66.154	75.230	0.078	5	B1I	0.0155	66.325	75.424
C0E3B119M	B	C1	2	1	64.748	78.942	0.078	5	B1I	0.0157	65.514	79.876
C0E3B216M	B	C2	2	2	68.820	76.771	0.074	5	B1I	0.0149	66.112	73.750
C0E3B217M	B	C2	2	2	61.443	83.811	0.076	5	B1I	0.0152	60.372	82.351
C0E3B218M	B	C2	2	2	62.568	77.585	0.076	5	B1I	0.0152	61.424	76.166
C0E3C116M	C	C1	3	1	73.327	83.732	0.076	5	B1I	0.0153	72.192	82.435
C0E3C117M	C	C1	3	1	68.411	84.452	0.078	5	B1I	0.0156	68.837	84.979
C0E3C118M	C	C1	3	1	81.584	82.503	0.078	5	B1I	0.0156	82.251	83.177
C0E3C119M	C	C1	3	1	76.180	80.222	0.078	5	B1I	0.0157	77.114	81.205
C0E3C216M	C	C2	3	2	78.561	83.861	0.076	5	B1I	0.0151	76.635	81.805
C0E3C217M	C	C2	3	2	68.503	87.520	0.077	5	B1I1 / D1I2	0.0153	67.781	86.598
C0E3C218M	C	C2	3	2	63.195	83.840	0.077	5	B1I	0.0155	63.100	83.713

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

Average	**67.901**	**80.710**	**$Average_{norm}$**	**0.0155**	**67.843**	**80.642**
Standard Dev.	**6.385**	**3.335**	**Standard $Dev._{norm}$**		**6.427**	**3.410**
Coeff. of Var. [%]	**9.403**	**4.133**	**Coeff. of Var. $[\%]_{norm}$**		**9.474**	**4.229**
Min.	**57.816**	**75.230**	**Min.**	**0.0149**	**58.736**	**73.750**
Max.	**81.584**	**87.520**	**Max.**	**0.0159**	**82.251**	**86.598**
Number of Spec.	**21**	**21**	**Number of Spec.**		**21**	**21**


Laminate Single Shear Bearing Properties (SSB3) -- (ETW)
Normalized 2% Offset Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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
Laminate Bearing Strength [ksi]


Laminate Single Shear Bearing Properties (SSB3) -- (ETW)
Normalized UltiamteStrength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
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 Bearing Strength [ksi]

4.29 Compression After Impact 1 Properties (CAI1)

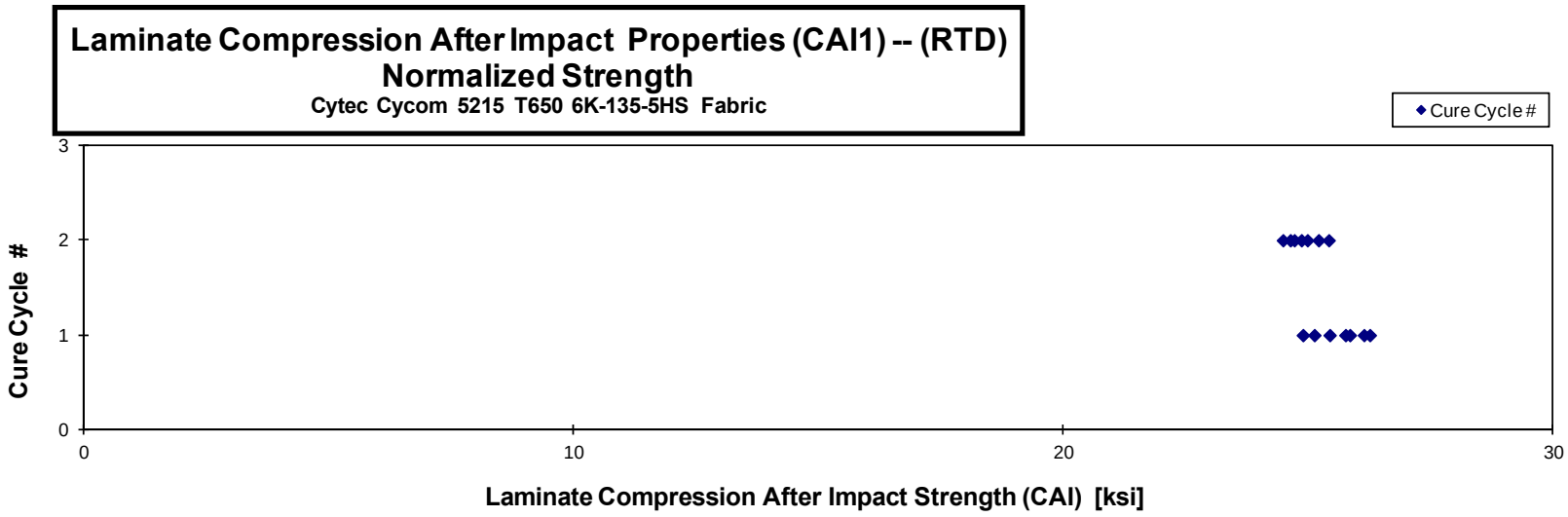
Laminate Compression After Impact Properties (CAI1) -- (RTD)
Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

normalizing t_{ply} [in]: 0.0155

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]
C0EKA111A	A	C1	1	1	278.11	26.348	0.185	12	LDM	0.0154	26.252
C0EKA112A	A	C1	1	1	276.95	24.875	0.186	12	LDM	0.0155	24.886
C0EKA113A	A	C1	1	1	279.35	25.861	0.185	12	LDM	0.0154	25.754
C0EKA114A	A	C1	1	1	275.41	25.707	0.184	12	LDM	0.0153	25.433
C0EKA115A	A	C1	1	1	281.24	25.840	0.186	12	LDM	0.0155	25.845
C0EKA116A	A	C1	1	1	279.31	24.985	0.187	12	LDM	0.0156	25.119
C0EKA117A	A	C1	1	1	280.87	25.983	0.187	12	LDM	0.0156	26.132
C0EKA211A	A	C2	1	2	275.98	24.895	0.184	12	LDM	0.0153	24.629
C0EKA212A	A	C2	1	2	279.35	25.376	0.186	12	LDM	0.0155	25.412
C0EKA213A	A	C2	1	2	276.21	24.788	0.184	12	LDM	0.0153	24.477
C0EKA214A	A	C2	1	2	272.55	25.218	0.182	12	LDM	0.0152	24.709
C0EKA215A	A	C2	1	2	274.67	25.227	0.183	12	LDM	0.0153	24.854
C0EKA216A	A	C2	1	2	270.95	25.523	0.182	12	LDM	0.0152	24.977
C0EKA217A	A	C2	1	2	277.61	25.342	0.185	12	LDM	0.0154	25.205

Average	25.426	
Standard Dev.	0.471	
Coeff. of Var. [%]	1.854	
Min.	24.788	
Max.	26.348	
Number of Spec.	14	

$Average_{norm}$	0.01540	25.263
$Standard\ Dev._{norm}$		0.562
$Coeff.\ of\ Var.\ [\%]_{norm}$		2.224
Min.	0.0152	24.477
Max.	0.0156	26.252
Number of Spec.		14


Laminate Compression After Impact Properties (CAI1) -- (RTD)
Normalized Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
3
2
1
0
0
10
20
30
Laminate Compression After Impact Strength (CAI) [ksi]

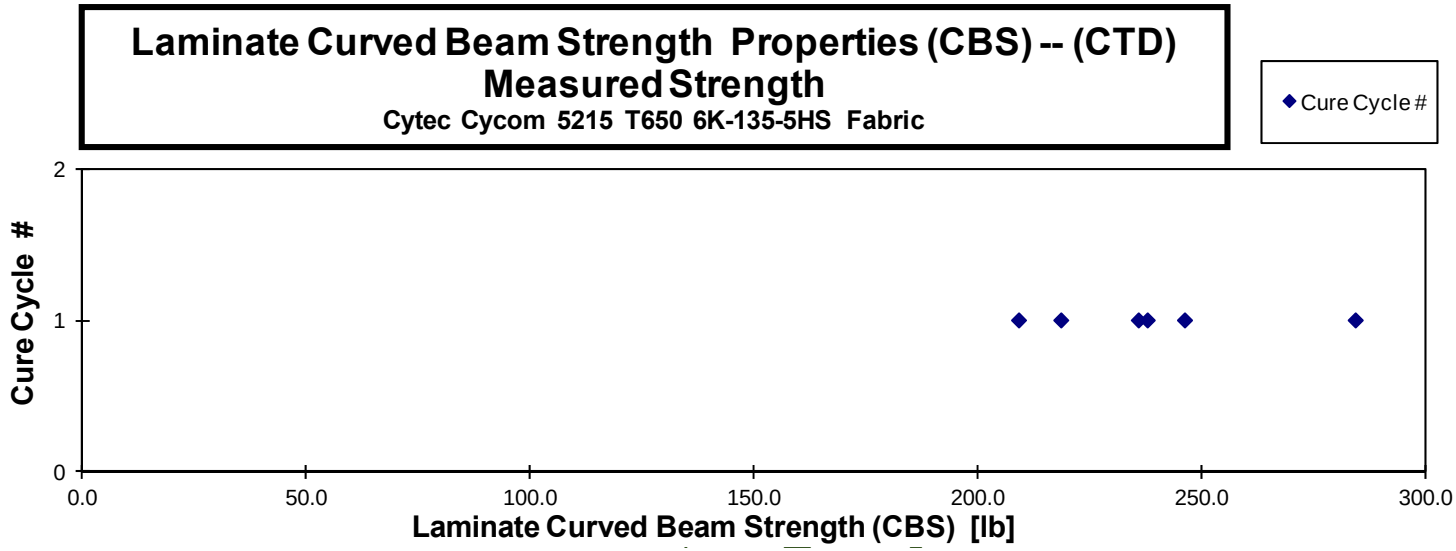
4.30 Interlaminar Tension Properties (ILT)

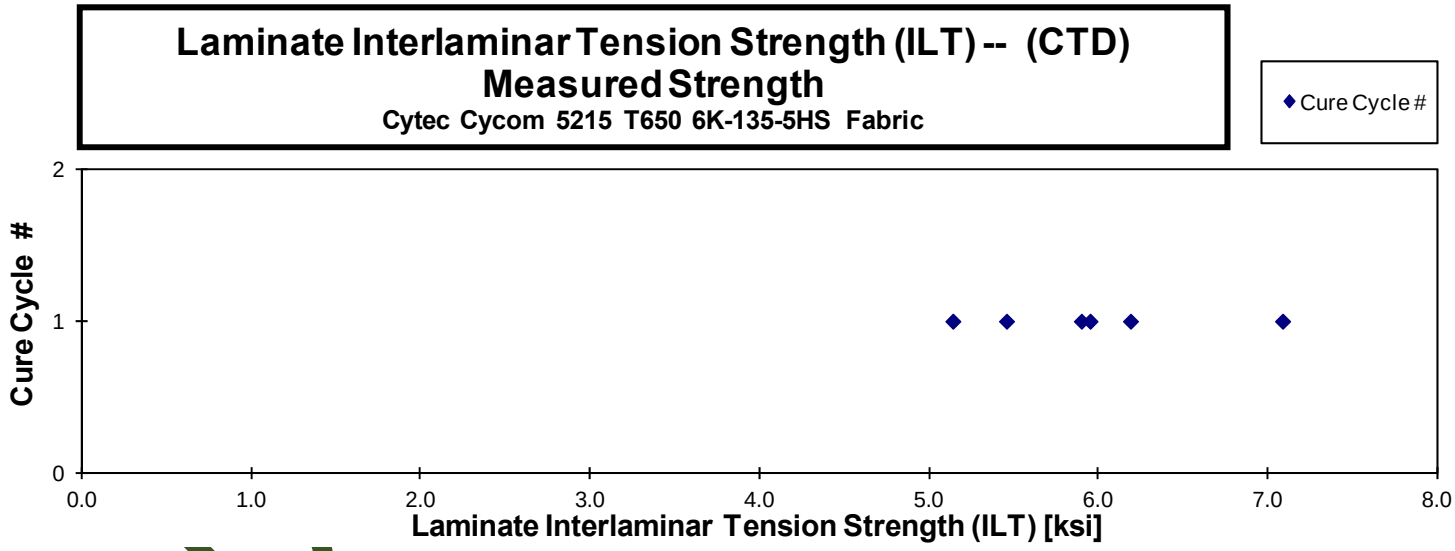
Laminate Curved Beam Strength Properties (ILT) -- (CTD) Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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	Avg. t_{ply} [in]	Failure Mode
C0EMA117B	A	C1	1	1	209.098	5.139	0.173	11	0.0158	INTERLAMINAR TENSION
C0EMA118B	A	C1	1	1	246.170	6.188	0.172	11	0.0157	INTERLAMINAR TENSION
C0EMA119B	A	C1	1	1	218.530	5.456	0.172	11	0.0156	INTERLAMINAR TENSION
C0EMA11AB	A	C1	1	1	284.293	7.086	0.172	11	0.0157	INTERLAMINAR TENSION
C0EMA11BB	A	C1	1	1	235.846	5.949	0.173	11	0.0157	INTERLAMINAR TENSION
C0EMA11CB	A	C1	1	1	237.845	5.898	0.175	11	0.0159	INTERLAMINAR TENSION

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

Average	**238.630**	**5.953**	**Average**	**0.016**
Standard Dev.	**26.178**	**0.671**	**Standard Dev.**	
Coeff. of Var. [%]	**10.970**	**11.272**	**Coeff. of Var. [%]**	
Min.	**209.098**	**5.139**	**Min.**	**0.016**
Max.	**284.293**	**7.086**	**Max.**	**0.016**
Number of Spec.	**6**	**6**	**Number of Spec.**	**6**


Laminate Curved Beam Strength Properties (CBS) -- (CTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
2
1
0
0.0
50.0
100.0
150.0
200.0
250.0
300.0
Laminate Curved Beam Strength (CBS) [lb]


Laminate Interlaminar Tension Strength (ILT) -- (CTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
2
1
0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Laminate Interlaminar Tension Strength (ILT) [ksi]

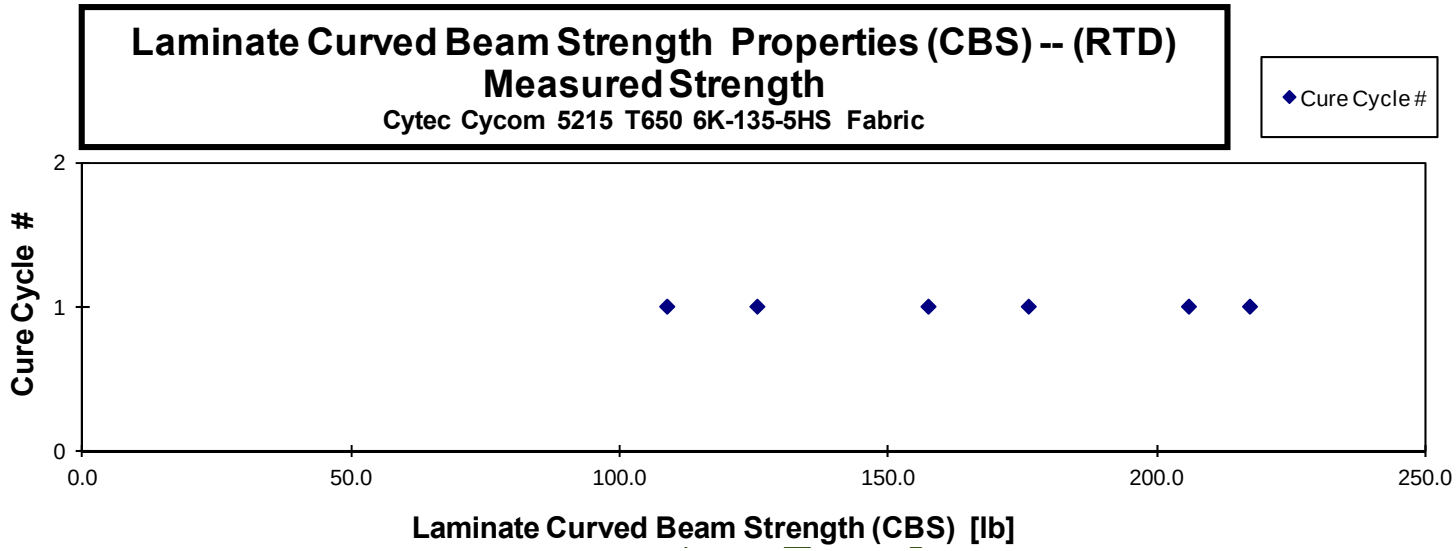
Laminate Curved Beam Strength Properties (ILT) -- (RTD) Strength

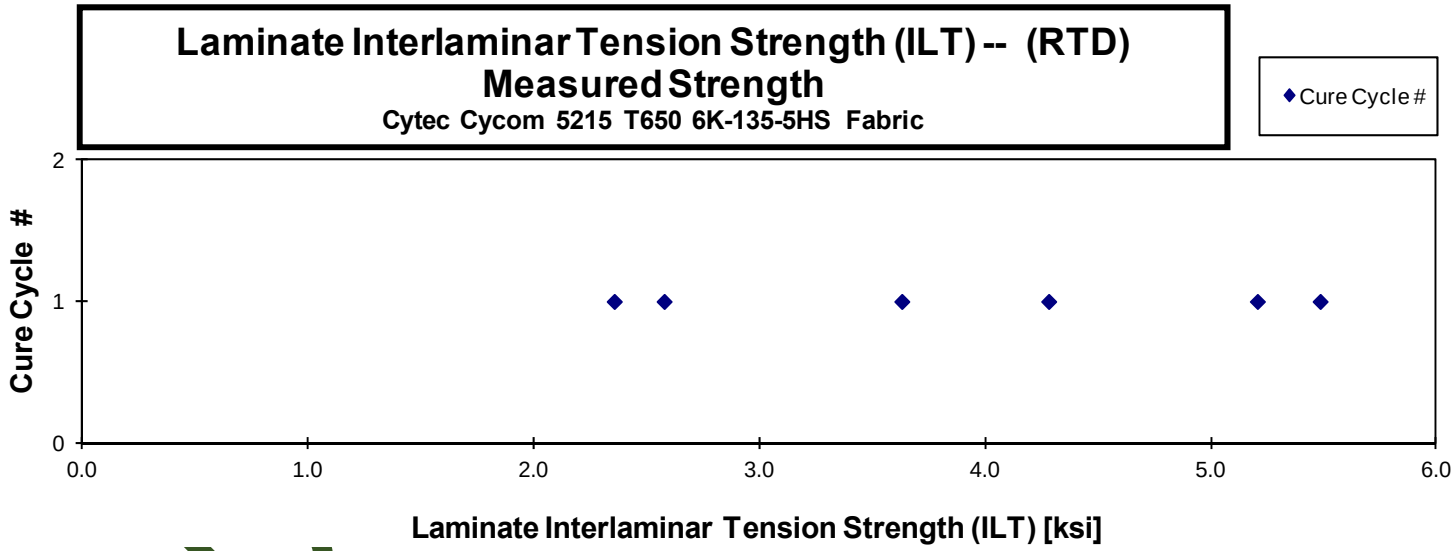
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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	Avg. t_{ply} [in]	Failure Mode
C0EMA111A	A	C1	1	1	125.601	2.577	0.173	11	0.0158	INTERLAMINAR TENSION
C0EMA112A	A	C1	1	1	108.810	2.356	0.174	11	0.0158	INTERLAMINAR TENSION
C0EMA113A	A	C1	1	1	157.466	3.630	0.173	11	0.0158	INTERLAMINAR TENSION
C0EMA114A	A	C1	1	1	176.124	4.280	0.173	11	0.0157	INTERLAMINAR TENSION
C0EMA115A	A	C1	1	1	205.954	5.205	0.172	11	0.0157	INTERLAMINAR TENSION
C0EMA116A	A	C1	1	1	217.319	5.483	0.172	11	0.0156	INTERLAMINAR TENSION

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

Average	**165.212**	**3.922**	**Average**	**0.016**	
Standard Dev.	**43.138**	**1.308**	**Standard Dev.**		
Coeff. of Var. [%]	**26.110**	**33.356**	**Coeff. of Var. [%]**		
Min.	**108.810**	**2.356**	**Min.**	**0.016**	
Max.	**217.319**	**5.483**	**Max.**	**0.016**	
Number of Spec.	**6**	**6**	**Number of Spec.**	**6**	


Laminate Curved Beam Strength Properties (CBS) -- (RTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
0
1
2
0.0
50.0
100.0
150.0
200.0
250.0
Laminate Curved Beam Strength (CBS) [lb]


Laminate Interlaminar Tension Strength (ILT) -- (RTD)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
0
1
2
0.0
1.0
2.0
3.0
4.0
5.0
6.0
Laminate Interlaminar Tension Strength (ILT) [ksi]

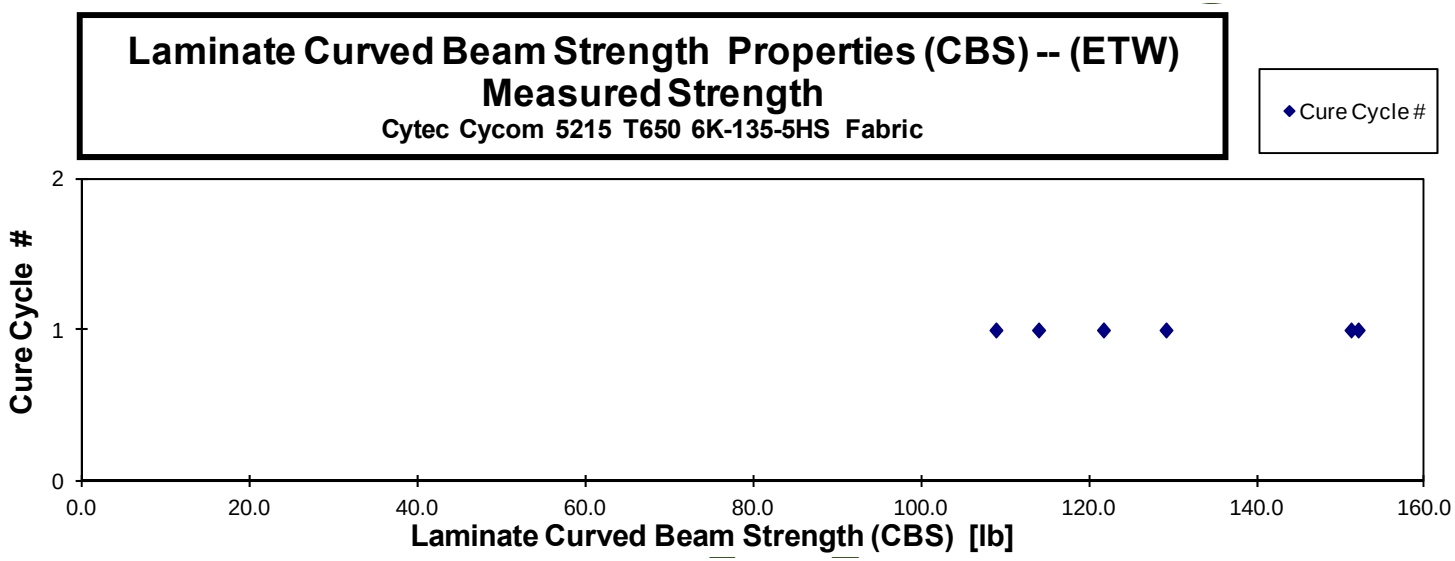
Laminate Curved Beam Strength Properties (ILT) -- (ETW) Strength

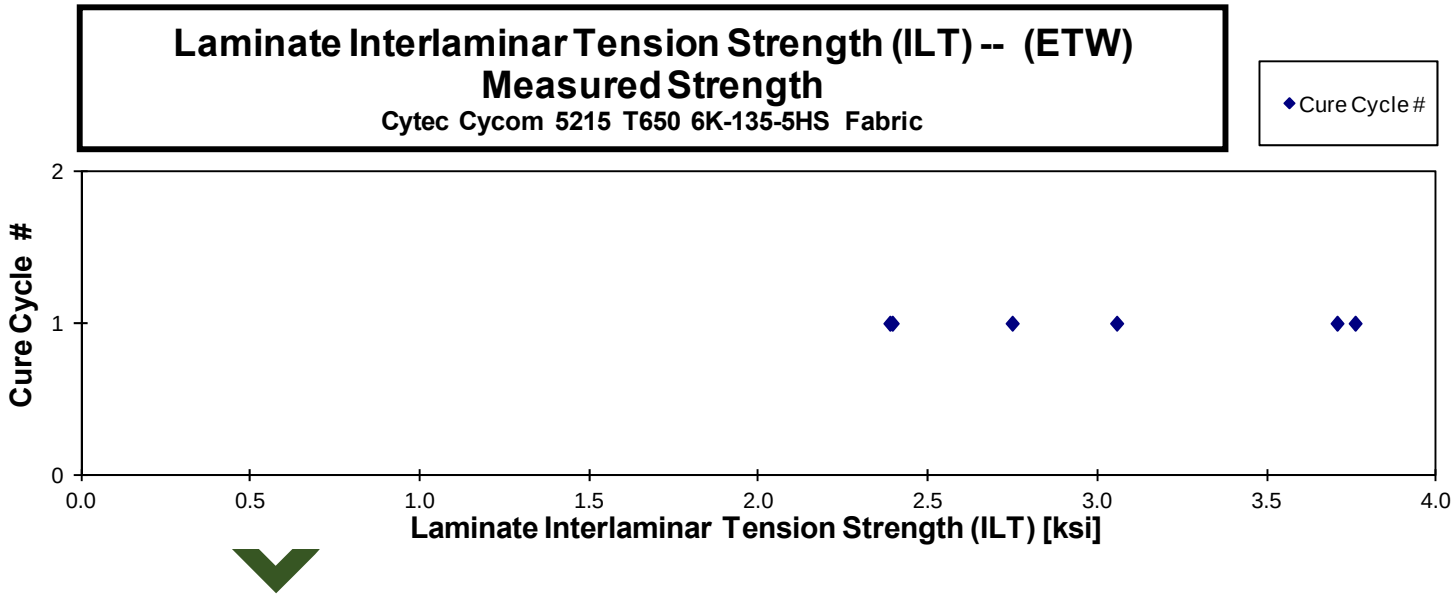
Cytec Cycom 5215 T650 6K-135-5HS Fabric

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	Avg. t_{ply} [in]	Failure Mode
C0EMA11DM	A	C1	1	1	151.133	3.757	0.174	11	0.0158	INTERLAMINAR TENSION
C0EMA11EM	A	C1	1	1	151.974	3.704	0.175	11	0.0159	INTERLAMINAR TENSION
C0EMA11FM	A	C1	1	1	113.905	2.391	0.174	11	0.0158	INTERLAMINAR TENSION
C0EMA11GM	A	C1	1	1	108.823	2.384	0.175	11	0.0159	INTERLAMINAR TENSION
C0EMA11HM	A	C1	1	1	121.632	2.745	0.175	11	0.0159	INTERLAMINAR TENSION
C0EMA11IM	A	C1	1	1	129.091	3.053	0.174	11	0.0158	INTERLAMINAR TENSION

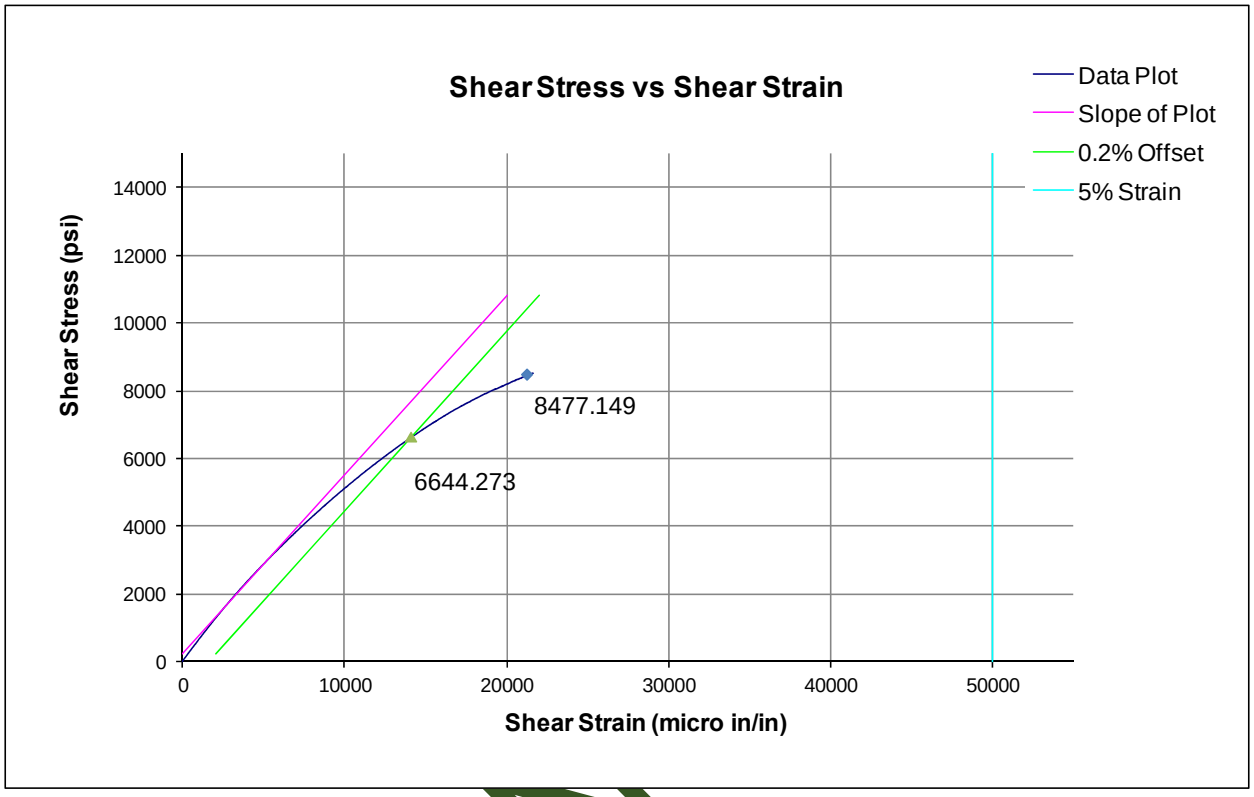
Basis values are not calcuated on ILT/CBS due to variation in processing

Average	**129.426**	**3.006**	**Average**	**0.016**	
Standard Dev.	**18.471**	**0.614**	**Standard Dev.**		
Coeff. of Var. [%]	**14.271**	**20.440**	**Coeff. of Var. [%]**		
Min.	**108.823**	**2.384**	**Min.**	**0.016**	
Max.	**151.974**	**3.757**	**Max.**	**0.016**	
Number of Spec.	**6**	**6**	**Number of Spec.**	**6**	


Laminate Curved Beam Strength Properties (CBS) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
0
1
2
0.0
20.0
40.0
60.0
80.0
100.0
120.0
140.0
160.0
Laminate Curved Beam Strength (CBS) [lb]


Laminate Interlaminar Tension Strength (ILT) -- (ETW)
Measured Strength
Cytec Cycom 5215 T650 6K-135-5HS Fabric
Cure Cycle #
Cure Cycle #
0
1
2
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
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	9.562	9.232	8.895	-3.568
b	9.515	9.232	8.895	-3.059
c	9.518	9.232	8.895	-3.101
d	9.472	9.232	8.895	-2.597
e	9.279	9.232	8.895	-0.503
f	9.521	9.232	8.895	-3.132
g	9.152	9.232	8.895	0.873
h	9.577	9.232	8.895	-3.740
i	9.011	9.232	8.895	2.397
j	9.220	9.232	8.895	0.133
k	9.308	9.232	8.895	-0.824
l	9.049	9.232	8.895	1.987
r	8.955	9.232	8.895	3.002
A	9.232	9.232	8.895	0.000
t	8.895	9.232	8.895	3.649

	Fluid	Exposure
a	100 Low lead Fuel	90 days min @ 70°F ± 10F
b	Jet Fuel A	
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	
l	Distilled Water	
j	MEK Washing Fluid	90 mins @ 70°F ± 10F
k	P.G. Deicer I Mil-A-8243	
l	I.A. Deicing Agent (TT-I-735)	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 Fuel A	
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	
p	Distilled Water	
m	MEK Washing Fluid	90 mins @ 70°F ± 10F
n	P.G. Deicer I Mil-A-8243	
p	I.A. Deicing Agent (TT-I-735)	48±4 hrs @ 70°F ± 10F
x	Dry	Per section 6.1 Test Plan
w	85% Relative Humidity	

Fluid	Average Short Beam Strength With Fluid (ksi)	Same Environment Short Beam Strength Without Fluid (ksi) (ETD)	Worst Case Environment Short Beam Strength (ksi) (ETW)	% Strength Reduction With Respect to ETD (no fluid)
1	7.644	7.913	6.102	3.400
2	7.639	7.913	6.102	3.456
3	7.706	7.913	6.102	2.615
4	7.792	7.913	6.102	1.524
5	7.911	7.913	6.102	0.022
6	7.781	7.913	6.102	1.661
7	7.050	7.913	6.102	10.898
8	8.009	7.913	6.102	-1.213
9	7.083	7.913	6.102	10.482
m	8.097	7.913	6.102	-2.333
n	7.824	7.913	6.102	1.117
p	8.029	7.913	6.102	-1.475
s	7.137	7.913	6.102	9.800
x	7.913	7.913	6.102	0.000
w	6.102	7.913	6.102	22.883

Fluid Sensitivity Screening
Short Beam Strength (SBS) -- (RT)
Cytec Cycom 5215 T650 6K-135-5HS Fabric

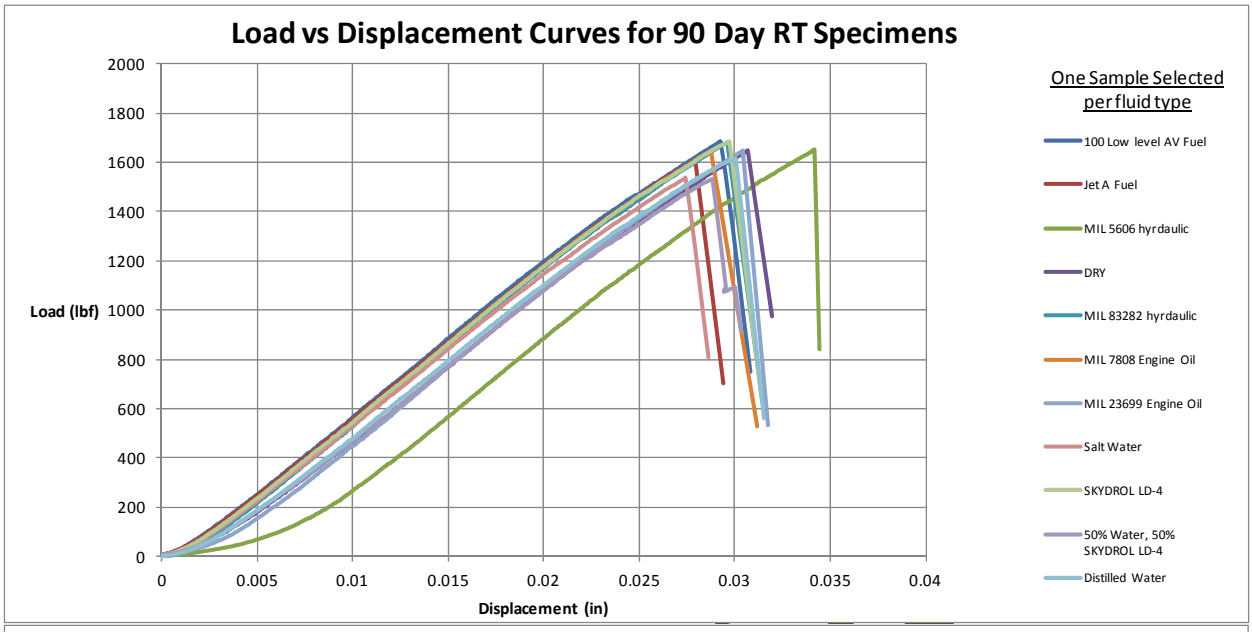
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Fluid	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode	Average
C0EQA321a	A	C3	1	1	9.598	0.263	17	0.0155	Interlaminar Shear	
C0EQA322a	A	C3	1	1	9.416	0.263	17	0.0155	Interlaminar Shear	
C0EQA323a	A	C3	1	1	9.720	0.261	17	0.0153	Interlaminar Shear	9.562
C0EQA324a	A	C3	1	1	9.661	0.263	17	0.0155	Interlaminar Shear	
C0EQA325a	A	C3	1	1	9.163	0.263	17	0.0155	Interlaminar Shear	
C0EQA326a	A	C3	1	1	9.812	0.257	17	0.0151	Interlaminar Shear	
C0EQA32Db	A	C3	1	2	9.139	0.263	17	0.0154	Interlaminar Shear	
C0EQA32Eb	A	C3	1	2	9.235	0.258	17	0.0152	Interlaminar Shear	
C0EQA32Fb	A	C3	1	2	9.568	0.260	17	0.0153	Interlaminar Shear	9.515
C0EQA32Gb	A	C3	1	2	9.641	0.262	17	0.0154	Interlaminar Shear/Compression	
C0EQA32Hb	A	C3	1	2	9.756	0.263	17	0.0155	Interlaminar Shear/Compression	
C0EQA32Ib	A	C3	1	2	9.749	0.262	17	0.0154	Interlaminar Shear/Compression	
C0EQA331c	A	C3	1	3	9.596	0.258	17	0.0152	Interlaminar Shear	
C0EQA332c	A	C3	1	3	9.746	0.258	17	0.0152	Interlaminar Shear	
C0EQA333c	A	C3	1	3	9.247	0.261	17	0.0154	Interlaminar Shear	9.518
C0EQA334c	A	C3	1	3	9.360	0.263	17	0.0155	Interlaminar Shear	
C0EQA335c	A	C3	1	3	9.643	0.264	17	0.0155	Interlaminar Shear	
C0EQA33Cd	A	C3	1	4	9.566	0.263	17	0.0155	Interlaminar Shear	
C0EQA33Dd	A	C3	1	4	9.316	0.264	17	0.0155	Interlaminar Shear	9.472
C0EQA33Ed	A	C3	1	4	9.096	0.265	17	0.0156	Interlaminar Shear	
C0EQA33Fd	A	C3	1	4	9.738	0.263	17	0.0155	Interlaminar Shear/Compression	
C0EQA33Gd	A	C3	1	4	9.644	0.261	17	0.0154	Interlaminar Shear	
C0EQA341e	A	C3	1	5	9.455	0.261	17	0.0153	Interlaminar Shear	
C0EQA342e	A	C3	1	5	9.615	0.262	17	0.0154	Interlaminar Shear	9.279
C0EQA343e	A	C3	1	5	8.565	0.261	17	0.0154	Interlaminar Shear	
C0EQA344e	A	C3	1	5	9.332	0.262	17	0.0154	Interlaminar Shear	
C0EQA345e	A	C3	1	5	9.308	0.261	17	0.0154	Interlaminar Shear	
C0EQA346e	A	C3	1	5	9.397	0.261	17	0.0154	Interlaminar Shear	
C0EQA34Df	A	C3	1	6	9.543	0.259	17	0.0152	Interlaminar Shear	
C0EQA34Ef	A	C3	1	6	9.580	0.260	17	0.0153	Interlaminar Shear	
C0EQA34Ff	A	C3	1	6	9.584	0.262	17	0.0154	Interlaminar Shear	9.521
C0EQA34Gf	A	C3	1	6	9.520	0.263	17	0.0155	Interlaminar Shear	
C0EQA34Hf	A	C3	1	6	9.528	0.262	17	0.0154	Interlaminar Shear	
C0EQA34If	A	C3	1	6	9.373	0.262	17	0.0154	Interlaminar Shear	
C0EQA351g	A	C3	1	7	8.879	0.257	17	0.0151	Interlaminar Shear	
C0EQA352g	A	C3	1	7	8.841	0.258	17	0.0152	Interlaminar Shear	
C0EQA353g	A	C3	1	7	8.901	0.260	17	0.0153	Interlaminar Shear	9.152
C0EQA354g	A	C3	1	7	9.630	0.261	17	0.0153	Interlaminar Shear	
C0EQA355g	A	C3	1	7	9.552	0.262	17	0.0154	Interlaminar Shear	
C0EQA356g	A	C3	1	7	9.106	0.263	17	0.0154	Interlaminar Shear	

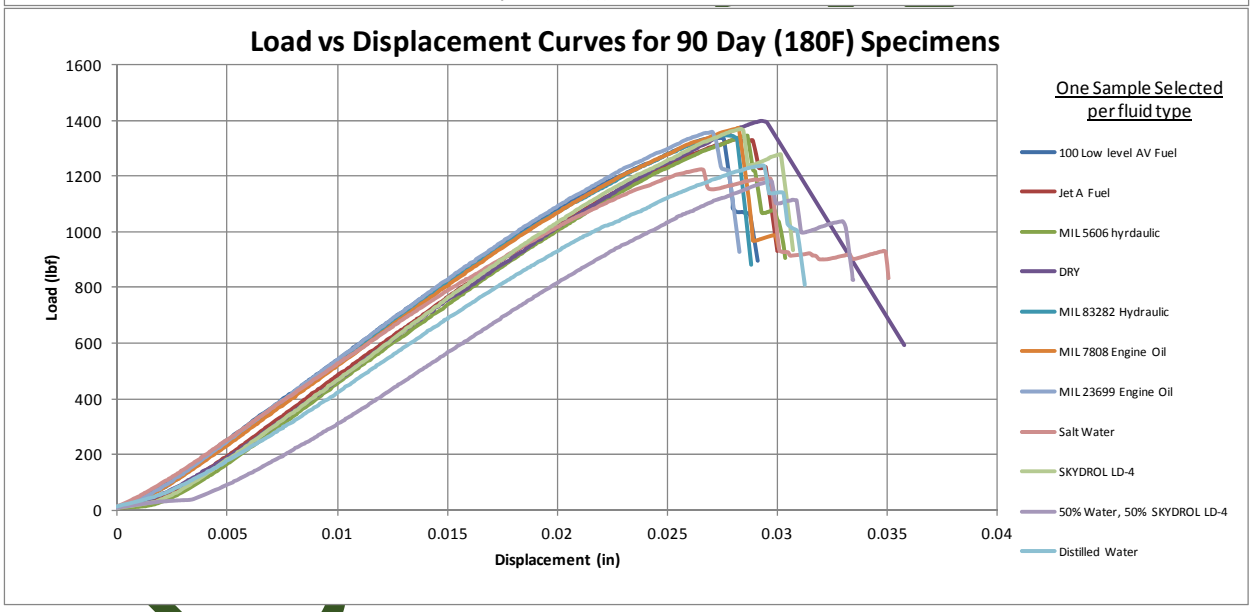
C0EQA35Dh	A	C3	1	8	9.637	0.262	17	0.0154	Interlaminar Shear	
C0EQA35Eh	A	C3	1	8	9.555	0.263	17	0.0155	Interlaminar Shear	
C0EQA35Fh	A	C3	1	8	9.601	0.260	17	0.0153	Interlaminar Shear	9.577
C0EQA35Gh	A	C3	1	8	9.572	0.258	17	0.0152	Interlaminar Shear	
C0EQA35Hh	A	C3	1	8	9.469	0.261	17	0.0154	Interlaminar Shear	
C0EQA35Ih	A	C3	1	8	9.631	0.258	17	0.0152	Interlaminar Shear	
C0EQA461i	A	C4	1	9	9.466	0.258	17	0.0152	Interlaminar Shear	
C0EQA462i	A	C4	1	9	9.182	0.260	17	0.0153	Interlaminar Shear	9.011
C0EQA463i	A	C4	1	9	8.515	0.259	17	0.0152	Interlaminar Shear	
C0EQA464i	A	C4	1	9	8.903	0.258	17	0.0152	Interlaminar Shear	
C0EQA465i	A	C4	1	9	9.048	0.259	17	0.0153	Interlaminar Shear	
C0EQA466i	A	C4	1	9	8.951	0.257	17	0.0151	Interlaminar Shear	
C0EQA46Dj	A	C4	1	10	9.175	0.260	17	0.0153	Interlaminar Shear	
C0EQA46Ej	A	C4	1	10	9.580	0.260	17	0.0153	Interlaminar Shear	
C0EQA46Fj	A	C4	1	10	9.718	0.259	17	0.0152	Interlaminar Shear	9.220
C0EQA46Gj	A	C4	1	10	9.145	0.258	17	0.0152	Interlaminar Shear	
C0EQA46Hj	A	C4	1	10	9.525	0.258	17	0.0152	Interlaminar Shear	
C0EQA46Ij	A	C4	1	10	8.175	0.259	17	0.0152	Interlaminar Shear	
C0EQA471k	A	C4	1	11	9.214	0.264	17	0.0155	Interlaminar Shear	
C0EQA472k	A	C4	1	11	9.183	0.264	17	0.0155	Interlaminar Shear	
C0EQA473k	A	C4	1	11	9.573	0.264	17	0.0155	Interlaminar Shear	9.308
C0EQA474k	A	C4	1	11	9.526	0.264	17	0.0156	Interlaminar Shear	
C0EQA475k	A	C4	1	11	9.009	0.264	17	0.0155	Interlaminar Shear	
C0EQA476k	A	C4	1	11	9.345	0.263	17	0.0155	Interlaminar Shear	
C0EQA47Dl	A	C4	1	12	8.994	0.260	17	0.0153	Interlaminar Shear	
C0EQA47El	A	C4	1	12	8.815	0.258	17	0.0152	Interlaminar Shear	9.049
C0EQA47Fl	A	C4	1	12	9.154	0.255	17	0.0150	Interlaminar Shear	
C0EQA47Gl	A	C4	1	12	9.237	0.255	17	0.0150	Interlaminar Shear	
C0EQA47Hl	A	C4	1	12	8.828	0.258	17	0.0152	Interlaminar Shear	
C0EQA47Il	A	C4	1	12	9.263	0.260	17	0.0153	Interlaminar Shear	
C0EQA481r	A	C4	1	13	8.759	0.260	17	0.0153	Interlaminar Shear	
C0EQA482r	A	C4	1	13	9.254	0.262	17	0.0154	Interlaminar Shear	8.955
C0EQA483r	A	C4	1	13	8.870	0.259	17	0.0153	Interlaminar Shear	
C0EQA484r	A	C4	1	13	9.449	0.258	17	0.0152	Interlaminar Shear	
C0EQA485r	A	C4	1	13	9.065	0.255	17	0.0150	Interlaminar Shear	
C0EQA486r	A	C4	1	13	8.333	0.260	17	0.0153	Interlaminar Shear	
C0EQA48DA	A	C4	1	14	9.676	0.262	17	0.0154	Interlaminar Shear	
C0EQA48EA	A	C4	1	14	9.250	0.261	17	0.0153	Interlaminar Shear	9.232
C0EQA48FA	A	C4	1	14	9.197	0.262	17	0.0154	Interlaminar Shear	
C0EQA48GA	A	C4	1	14	8.690	0.261	17	0.0154	Interlaminar Shear	
C0EQA48HA	A	C4	1	14	9.481	0.261	17	0.0154	Interlaminar Shear	
C0EQA48IA	A	C4	1	14	9.098	0.261	17	0.0153	Interlaminar Shear	
C0EQA491t	A	C4	1	15	8.527	0.257	17	0.0151	Interlaminar Shear	
C0EQA492t	A	C4	1	15	9.371	0.259	17	0.0152	Interlaminar Shear	8.895
C0EQA493t	A	C4	1	15	8.843	0.262	17	0.0154	Interlaminar Shear	
C0EQA494t	A	C4	1	15	9.142	0.264	17	0.0155	Interlaminar Shear	
C0EQA495t	A	C4	1	15	8.789	0.263	17	0.0155	Interlaminar Shear	
C0EQA496t	A	C4	1	15	8.700	0.263	17	0.0154	Interlaminar Shear	

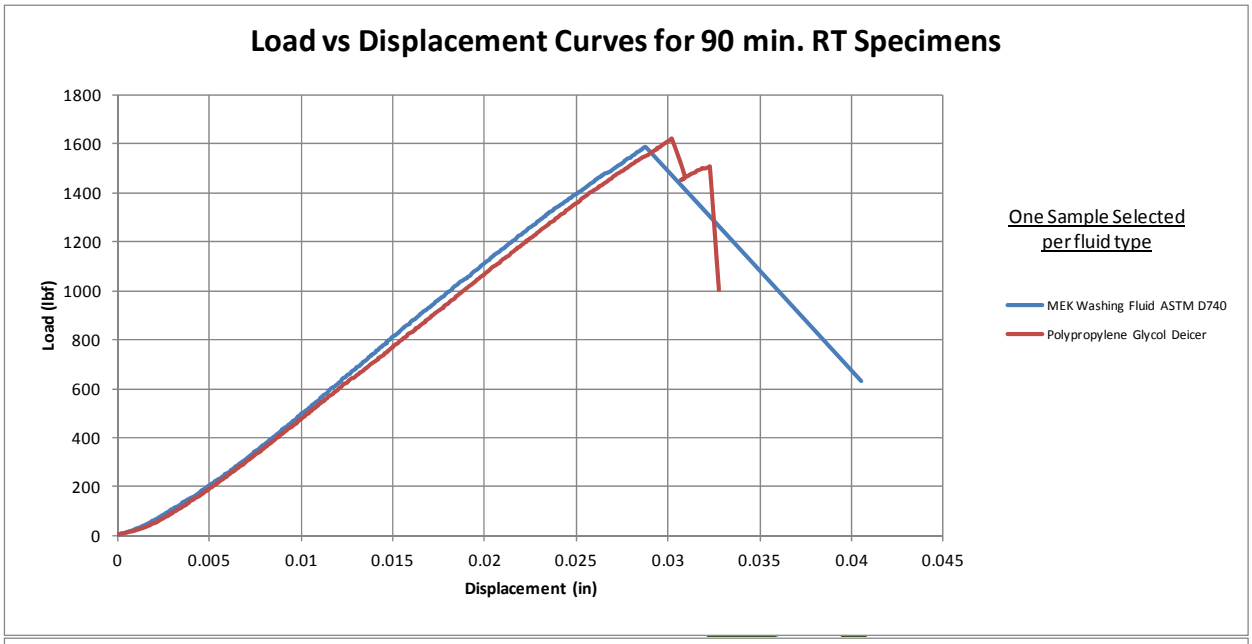
Fluid Sensitivity Screening
Short Beam Strength (SBS) -- (180F)
Cytec Cycom 5215 T650 6K-135-5HS Fabric

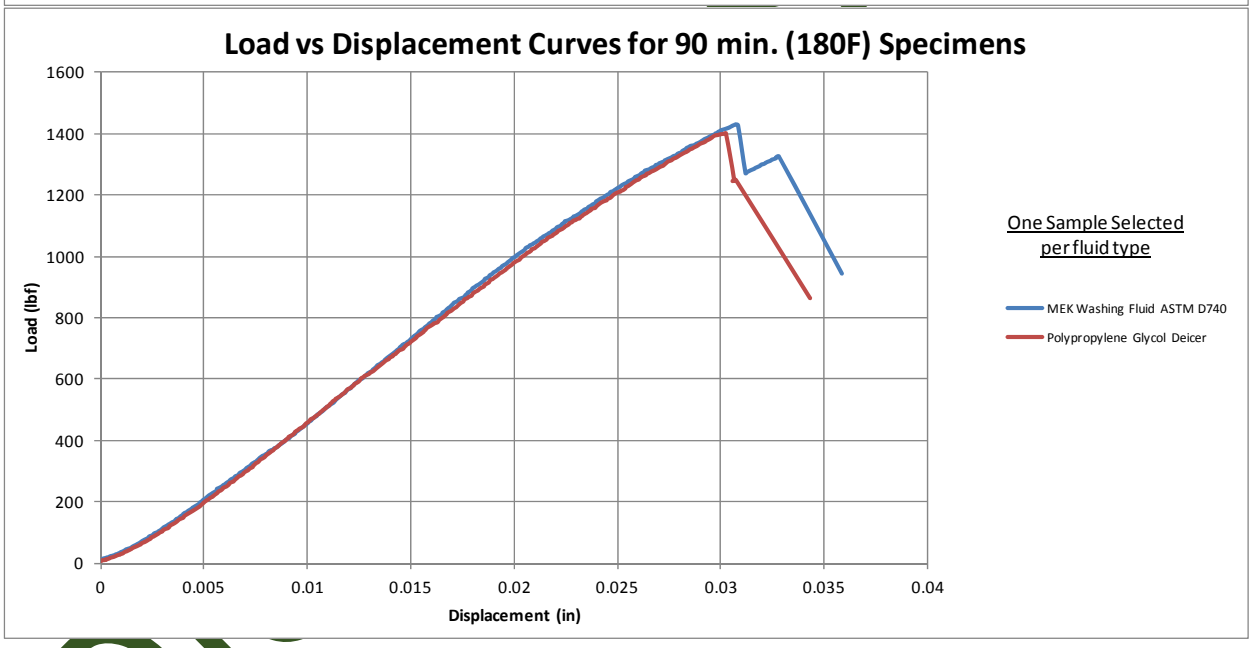
Specimen Number	Cytec Batch #	Cytec Cure Cycle	Prepreg Lot #	Fluid	Strength [ksi]	Avg. Specimen Thickn. [in]	# Plies in Laminate	Avg. tply [in]	Failure Mode	Average
C0EQA3271	A	C3	1	1	7.650	0.262	17	0.0154	Interlaminar Shear	
C0EQA3281	A	C3	1	1	7.609	0.264	17	0.0155	Interlaminar Shear	
C0EQA3291	A	C3	1	1	7.510	0.262	17	0.0154	Interlaminar Shear	7.644
C0EQA32A1	A	C3	1	1	7.691	0.263	17	0.0155	Interlaminar Shear	
C0EQA32B1	A	C3	1	1	7.675	0.263	17	0.0155	Interlaminar Shear	
C0EQA32C1	A	C3	1	1	7.727	0.263	17	0.0154	Interlaminar Shear	
C0EQA32J2	A	C3	1	2	7.617	0.262	17	0.0154	Interlaminar Shear	
C0EQA32K2	A	C3	1	2	7.709	0.263	17	0.0155	Interlaminar Shear	
C0EQA32L2	A	C3	1	2	7.578	0.259	17	0.0152	Interlaminar Shear	7.639
C0EQA32M2	A	C3	1	2	7.697	0.263	17	0.0155	Interlaminar Shear	
C0EQA32N2	A	C3	1	2	7.522	0.264	17	0.0155	Interlaminar Shear	
C0EQA32O2	A	C3	1	2	7.713	0.264	17	0.0155	Interlaminar Shear	
C0EQA3363	A	C3	1	3	7.664	0.263	17	0.0155	Interlaminar Shear	
C0EQA3373	A	C3	1	3	7.934	0.263	17	0.0155	Interlaminar Shear	
C0EQA3383	A	C3	1	3	7.473	0.263	17	0.0155	Interlaminar Shear	7.706
C0EQA3393	A	C3	1	3	7.757	0.265	17	0.0156	Interlaminar Shear	
C0EQA33A3	A	C3	1	3	7.731	0.264	17	0.0155	Interlaminar Shear	
C0EQA33B3	A	C3	1	3	7.675	0.264	17	0.0155	Interlaminar Shear	
C0EQA33H4	A	C3	1	4	7.778	0.259	17	0.0153	Interlaminar Shear	
C0EQA33I4	A	C3	1	4	7.779	0.257	17	0.0151	Interlaminar Shear	
C0EQA33J4	A	C3	1	4	7.768	0.258	17	0.0152	Interlaminar Shear	7.792
C0EQA33K4	A	C3	1	4	7.915	0.261	17	0.0154	Interlaminar Shear	
C0EQA33L4	A	C3	1	4	7.678	0.262	17	0.0154	Interlaminar Shear	
C0EQA33M4	A	C3	1	4	7.835	0.262	17	0.0154	Interlaminar Shear	
C0EQA3475	A	C3	1	5	7.863	0.261	17	0.0154	Interlaminar Shear	
C0EQA3485	A	C3	1	5	7.982	0.261	17	0.0154	Interlaminar Shear	
C0EQA3495	A	C3	1	5	7.898	0.260	17	0.0153	Interlaminar Shear	7.911
C0EQA34A5	A	C3	1	5	7.964	0.259	17	0.0152	Interlaminar Shear	
C0EQA34B5	A	C3	1	5	7.829	0.256	17	0.0151	Interlaminar Shear	
C0EQA34C5	A	C3	1	5	7.928	0.256	17	0.0150	Interlaminar Shear	
C0EQA34J6.	A	C3	1	6	7.735	0.263	17	0.0155	Interlaminar Shear	
C0EQA34K6	A	C3	1	6	7.790	0.263	17	0.0155	Interlaminar Shear	
C0EQA34L6	A	C3	1	6	7.983	0.264	17	0.0155	Interlaminar Shear	7.781
C0EQA34M6	A	C3	1	6	7.799	0.263	17	0.0155	Interlaminar Shear	
C0EQA34N6	A	C3	1	6	7.683	0.263	17	0.0155	Interlaminar Shear	
C0EQA34O6	A	C3	1	6	7.738	0.263	17	0.0155	Interlaminar Shear	
C0EQA3577	A	C3	1	7	7.000	0.262	17	0.0154	Interlaminar Shear	
C0EQA3587	A	C3	1	7	7.195	0.262	17	0.0154	Interlaminar Shear	
C0EQA3597	A	C3	1	7	6.987	0.263	17	0.0155	Interlaminar Shear	7.050
C0EQA35A7	A	C3	1	7	7.131	0.263	17	0.0155	Interlaminar Shear	
C0EQA35B7	A	C3	1	7	7.220	0.263	17	0.0155	Interlaminar Shear	
C0EQA35C7	A	C3	1	7	6.770	0.262	17	0.0154	Interlaminar Shear	

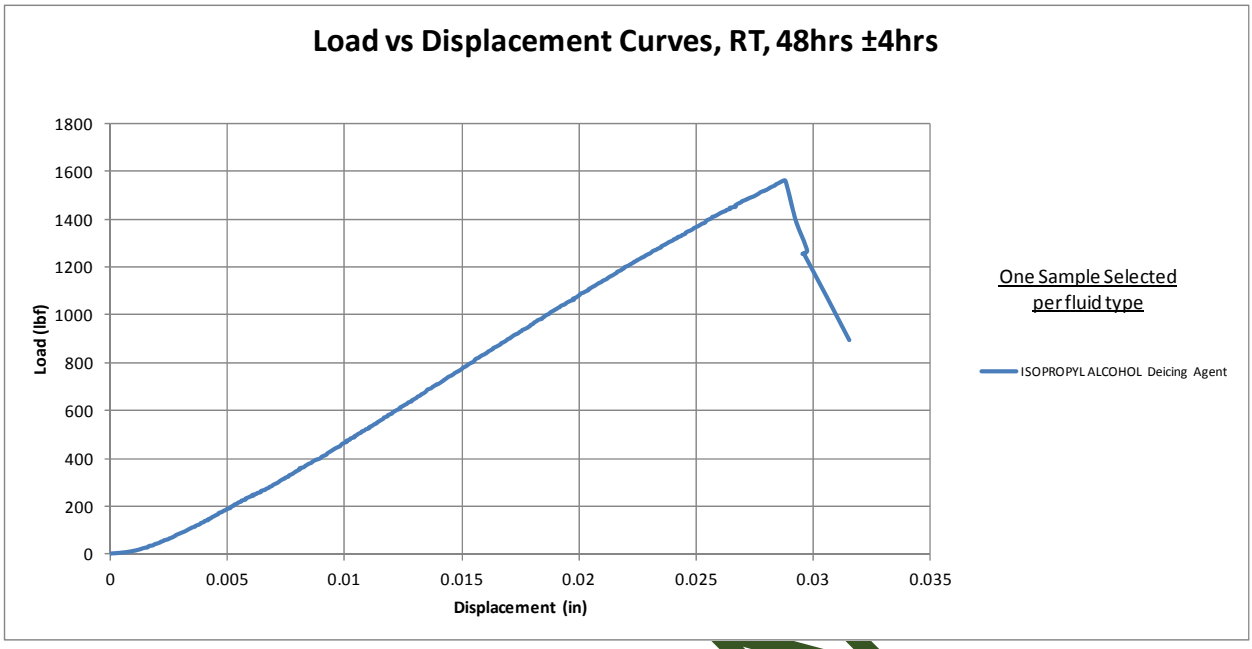
C0EQA35J8	A	C3	1	8	7.960	0.259	17	0.0152	Interlaminar Shear	
C0EQA35K8	A	C3	1	8	8.047	0.261	17	0.0154	Interlaminar Shear	
C0EQA35L8	A	C3	1	8	8.064	0.262	17	0.0154	Interlaminar Shear	8.009
C0EQA35M8	A	C3	1	8	8.254	0.262	17	0.0154	Interlaminar Shear	
C0EQA35N8	A	C3	1	8	7.940	0.262	17	0.0154	Interlaminar Shear	
C0EQA35O8	A	C3	1	8	7.787	0.263	17	0.0155	Interlaminar Shear	
C0EQA4679	A	C4	1	9	6.949	0.256	17	0.0150	Interlaminar Shear	
C0EQA4689	A	C4	1	9	7.158	0.255	17	0.0150	Interlaminar Shear/Compression	
C0EQA4699	A	C4	1	9	7.064	0.255	17	0.0150	Interlaminar Shear	7.083
C0EQA46A9	A	C4	1	9	7.131	0.256	17	0.0151	Interlaminar Shear	
C0EQA46B9	A	C4	1	9	7.146	0.258	17	0.0152	Interlaminar Shear	
C0EQA46C9	A	C4	1	9	7.052	0.258	17	0.0152	Interlaminar Shear	
C0EQA46Jm	A	C4	1	10	8.281	0.259	17	0.0152	Interlaminar Shear	
C0EQA46Km	A	C4	1	10	8.235	0.260	17	0.0153	Interlaminar Shear	
C0EQA46Lm	A	C4	1	10	8.176	0.260	17	0.0153	Interlaminar Shear	8.097
C0EQA46Mm	A	C4	1	10	8.078	0.258	17	0.0152	Interlaminar Shear	
C0EQA46Nm	A	C4	1	10	7.964	0.256	17	0.0151	Interlaminar Shear	
C0EQA46Om	A	C4	1	10	7.849	0.256	17	0.0151	Interlaminar Shear	
C0EQA477n	A	C4	1	11	8.002	0.262	17	0.0154	Interlaminar Shear	
C0EQA478n	A	C4	1	11	7.773	0.262	17	0.0154	Interlaminar Shear	
C0EQA479n	A	C4	1	11	7.886	0.263	17	0.0155	Interlaminar Shear	7.824
C0EQA47An	A	C4	1	11	7.736	0.262	17	0.0154	Interlaminar Shear	
C0EQA47Bn	A	C4	1	11	7.654	0.262	17	0.0154	Interlaminar Shear	
C0EQA47Cn	A	C4	1	11	7.894	0.263	17	0.0154	Interlaminar Shear	
C0EQA47Jp	A	C4	1	12	8.215	0.260	17	0.0153	Interlaminar Shear	
C0EQA47Kp	A	C4	1	12	8.012	0.261	17	0.0154	Interlaminar Shear	
C0EQA47Lp	A	C4	1	12	8.048	0.261	17	0.0153	Interlaminar Shear	8.029
C0EQA47Mp	A	C4	1	12	7.933	0.261	17	0.0153	Interlaminar Shear	
C0EQA47Np	A	C4	1	12	8.051	0.260	17	0.0153	Interlaminar Shear	
C0EQA47Op	A	C4	1	12	7.917	0.259	17	0.0153	Interlaminar Shear	
C0EQA487s	A	C4	1	13	7.157	0.260	17	0.0153	Interlaminar Shear	
C0EQA488s	A	C4	1	13	7.227	0.263	17	0.0154	Interlaminar Shear	
C0EQA489s	A	C4	1	13	7.218	0.264	17	0.0155	Interlaminar Shear	7.137
C0EQA48As	A	C4	1	13	7.141	0.263	17	0.0155	Interlaminar Shear	
C0EQA48Bs	A	C4	1	13	7.086	0.263	17	0.0155	Interlaminar Shear	
C0EQA48Cs	A	C4	1	13	6.994	0.264	17	0.0155	Interlaminar Shear	
C0EQA48Jx	A	C4	1	14	8.045	0.261	17	0.0154	Interlaminar Shear	
C0EQA48Kx	A	C4	1	14	7.920	0.259	17	0.0152	Compression	
C0EQA48Lx	A	C4	1	14	8.098	0.258	17	0.0152	Interlaminar Shear	7.913
C0EQA48Mx	A	C4	1	14	8.359	0.255	17	0.0150	Interlaminar Shear	
C0EQA48Nx	A	C4	1	14	7.530	0.258	17	0.0152	Interlaminar Shear	
C0EQA48Ox	A	C4	1	14	7.524	0.260	17	0.0153	Interlaminar Shear	
C0EQA497w	A	C4	1	15	6.115	0.263	17	0.0155	Interlaminar Shear	
C0EQA498w	A	C4	1	15	6.104	0.261	17	0.0154	Interlaminar Shear/Compression	
C0EQA499w	A	C4	1	15	6.028	0.262	17	0.0154	Interlaminar Shear	6.102
C0EQA49Aw	A	C4	1	15	6.132	0.262	17	0.0154	Interlaminar Shear	
C0EQA49Bw	A	C4	1	15	6.095	0.261	17	0.0154	Interlaminar Shear	
C0EQA49Cw	A	C4	1	15	6.138	0.261	17	0.0154	Interlaminar Shear	

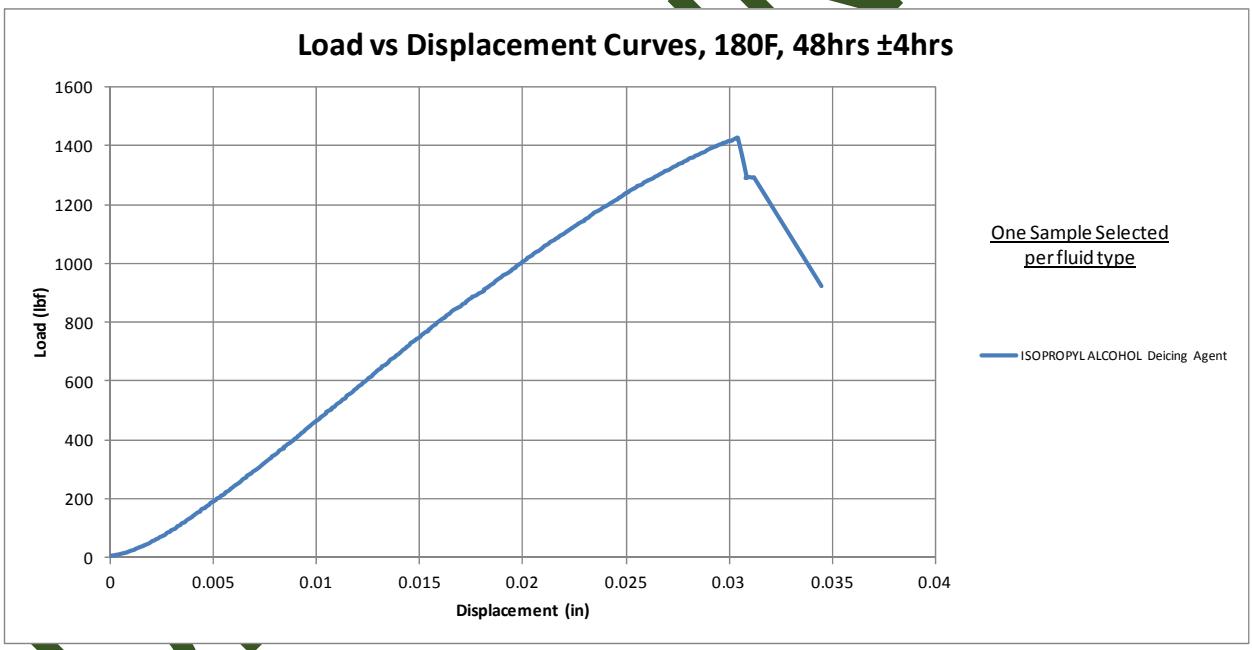

Load vs Displacement Curves for 90 Day RT Specimens
Load (lbf)
Displacement (in)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
One Sample Selected per fluid type
100 Low level AV Fuel
Jet A Fuel
MIL 5606 hyrdaulic
DRY
MIL 83282 hyrdaulic
MIL 7808 Engine Oil
MIL 23699 Engine Oil
Salt Water
SKYDROL LD-4
50% Water, 50% SKYDROL LD-4
Distilled Water

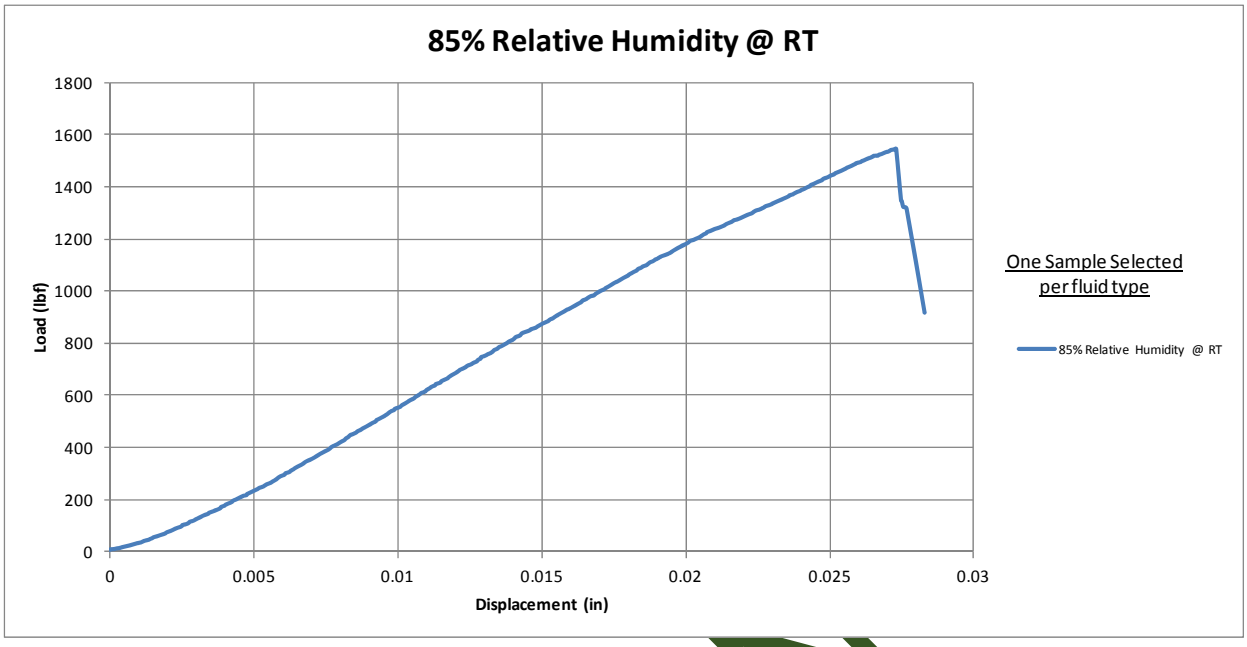

Load vs Displacement Curves for 90 Day (180F) Specimens
Load (lbf)
Displacement (in)
0
200
400
600
800
1000
1200
1400
1600
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
One Sample Selected per fluid type
100 Low level AV Fuel
Jet A Fuel
MIL 5606 hyrdaulic
DRY
MIL 83282 Hydraulic
MIL 7808 Engine Oil
MIL 23699 Engine Oil
Salt Water
SKYDROL LD-4
50% Water, 50% SKYDROL LD-4
Distilled Water

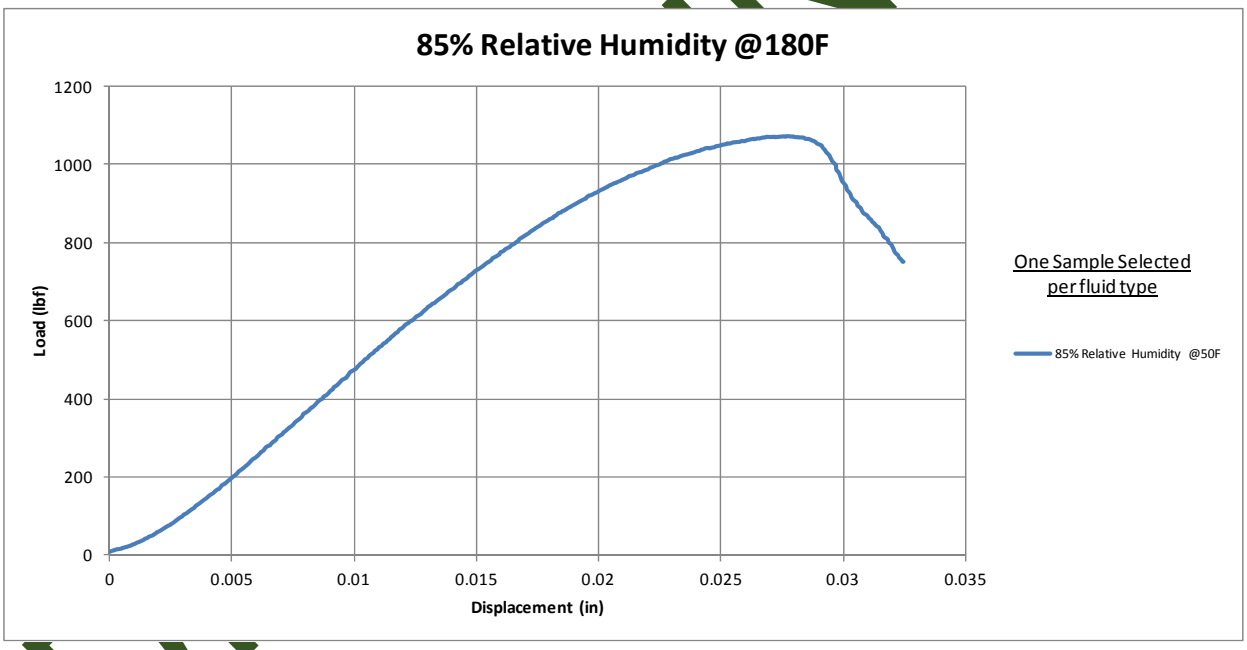

Load vs Displacement Curves for 90 min. RT Specimens
Load (lbf)
1800
1600
1400
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
Displacement (in)
One Sample Selected per fluid type
MEK Washing Fluid ASTM D740
Polypropylene Glycol Deicer


Load vs Displacement Curves for 90 min. (180F) Specimens
Load (lbf)
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
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)
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
Displacement (in)
One Sample Selected per fluid type
ISOPROPYL ALCOHOL Deicing Agent

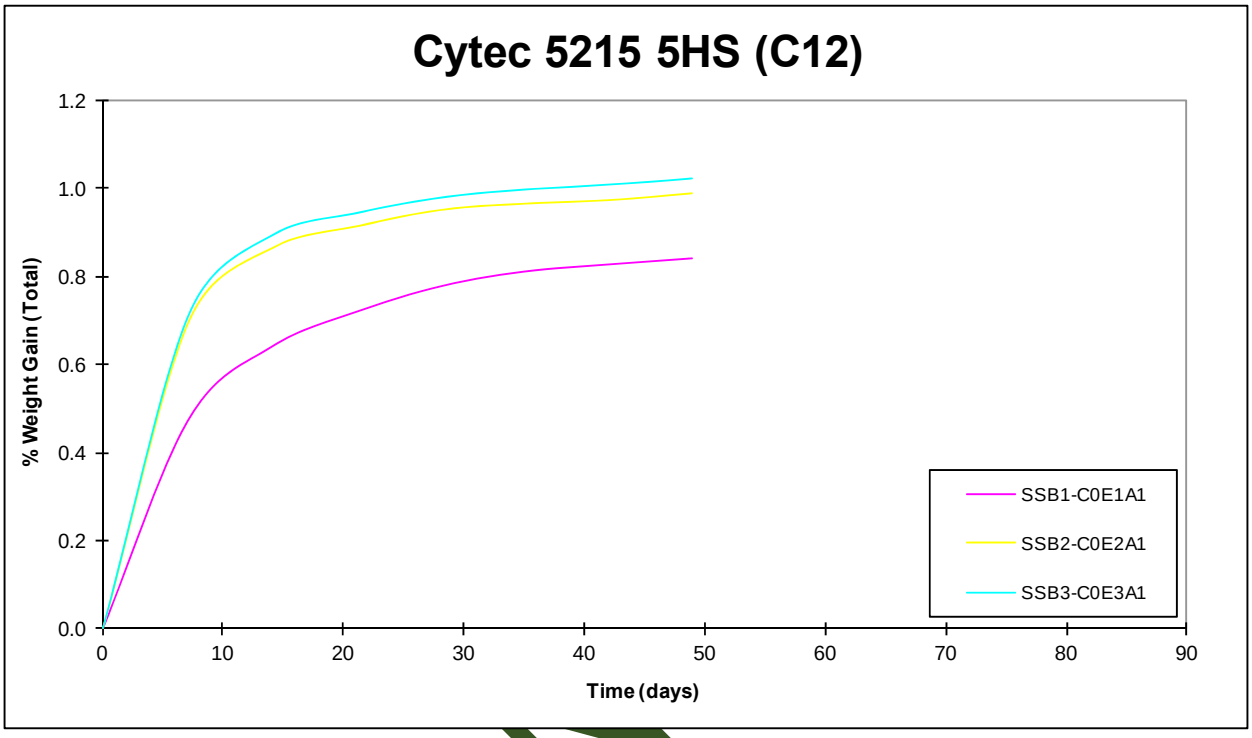

Load vs Displacement Curves, 180F, 48hrs ±4hrs
Load (lbf)
1600
1400
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
Displacement (in)
One Sample Selected per fluid type
ISOPROPYL ALCOHOL Deicing Agent


85% Relative Humidity @ RT
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
Displacement (in)
One Sample Selected per fluid type
85% Relative Humidity @ RT

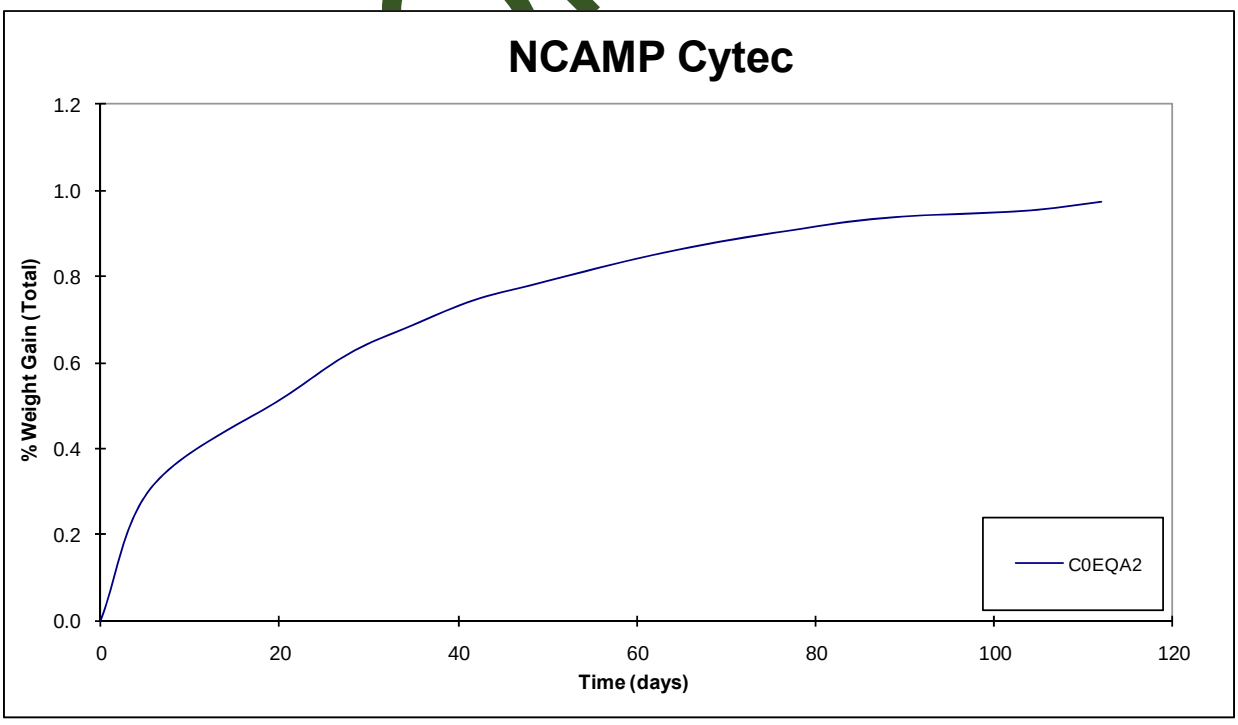

85% Relative Humidity @180F
Load (lbf)
1200
1000
800
600
400
200
0
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
Displacement (in)
One Sample Selected per fluid type
85% Relative Humidity @50F

7. Moisture Conditioning Charts

7.1 Single-Shear Bearing - Thinnest Panel



7.2 Short-Beam Strength - Thickest Panel



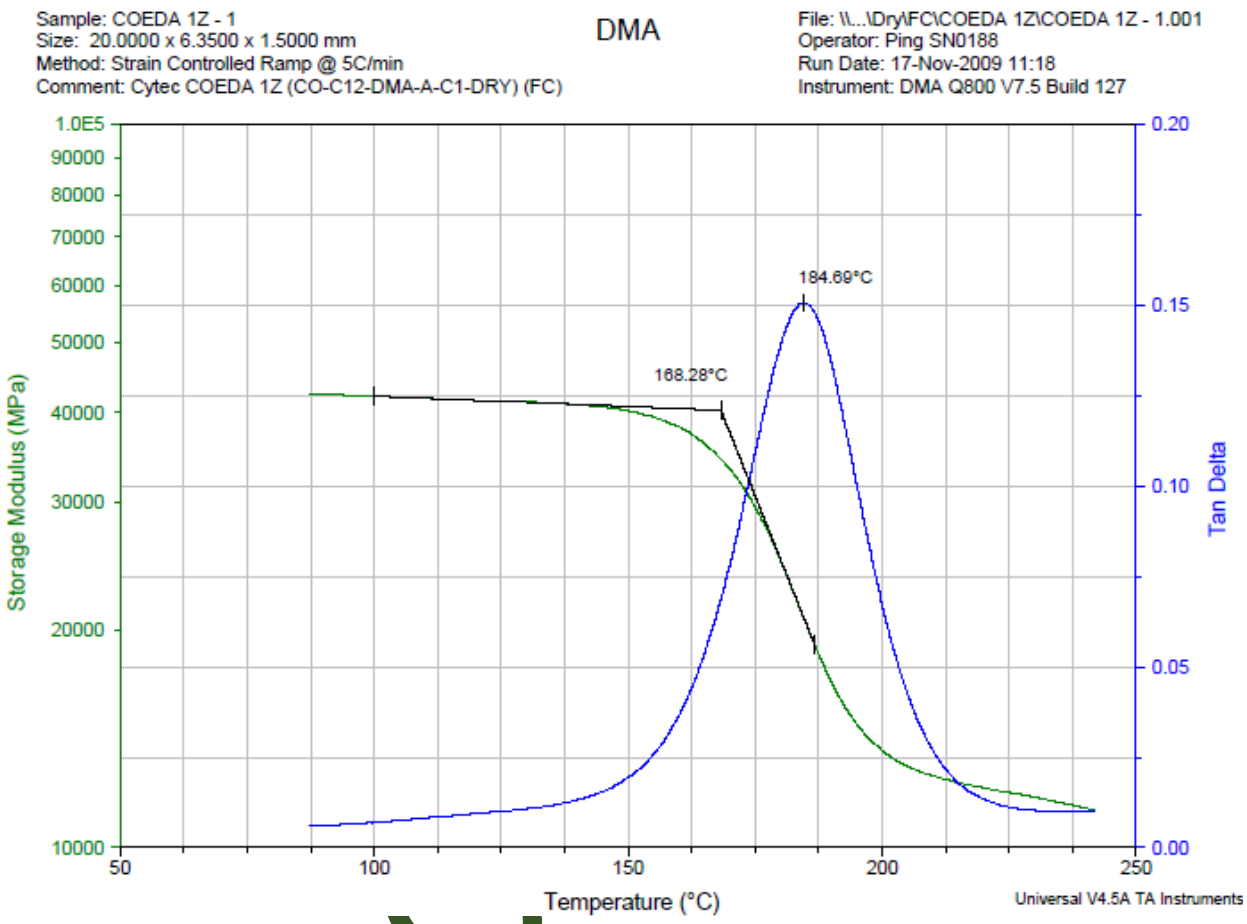
The rest of the curves can be found on the CD that accompanies this report.

8. DMA Results

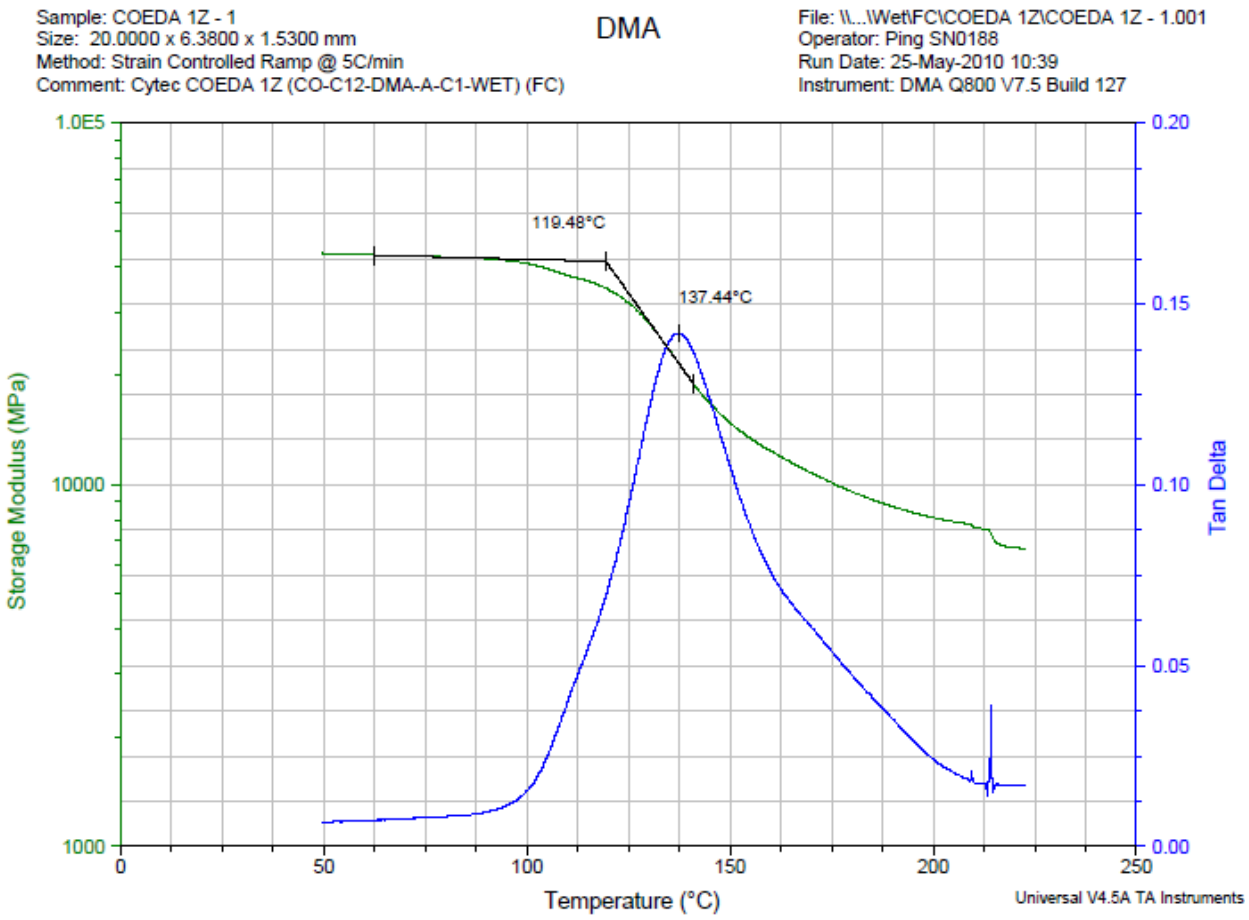
DMA Results Summary				
Cytec 5215 5 Harness C0EDX XX DRY				
	Onset Storage Modulus		Peak of Tangent Delta	
	Average		Average	
Sample #	Tg [°C]	Tg [°F]	Tg [°C]	Tg [°F]
COEDA 1L	161.23	322.21	176.75	350.15
COEDA 2L	165.28	329.50	181.36	358.44
COEDB 1L	165.51	329.91	181.83	359.29
COEDB 2L	165.18	329.32	181.07	357.92
COEDC 1L	159.10	318.38	174.67	346.40
COEDC 2L	165.13	329.23	182.28	360.10
C0EDA 1Z	167.26	333.06	183.96	363.13
C0EDA 2Z	161.54	322.77	176.56	349.80
C0EDB 1Z	168.72	335.69	185.43	365.77
C0EDB 2Z	162.91	325.24	179.52	355.13
C0EDC 1Z	163.31	325.96	179.03	354.25
C0EDC 2Z	159.50	319.10	174.63	346.33
Average		**326.70**		

DMA Results Summary				
Cytec 5215 5 Harness C0EDX XX WET				
	Onset Storage Modulus		Peak of Tangent Delta	
	Average		Average	
Sample #	Tg [°C]	Tg [°F]	Tg [°C]	Tg [°F]
COEDA 1L	116.56	241.81	132.67	270.80
COEDA 2L	119.18	246.52	136.19	277.13
COEDB 1L	118.30	244.94	135.44	275.78
COEDB 2L	118.21	244.77	134.49	274.07
COEDC 1L	113.59	236.46	130.79	267.42
COEDC 2L	117.45	243.40	135.09	275.16
C0EDA 1Z	119.45	247.00	137.37	279.26
C0EDA 2Z	115.28	239.50	132.08	269.74
C0EDB 1Z	122.17	251.90	138.21	280.77
C0EDB 2Z	118.85	245.93	135.34	275.60
C0EDC 1Z	118.20	244.75	134.60	274.27
C0EDC 2Z	113.73	236.71	129.87	265.77
Average		243.64		

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 FHC1 panel instead of CAI1 panel to fulfill batch requirements