

JEC Trade Show News

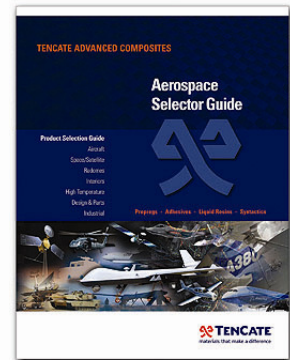
Subject: TenCate JEC News

New Products & Literature from TenCate Advanced Composites

New Prepregs for Satellites and Interior applications:
New Aerospace Selector Guide

March 23, 2009 Morgan Hill CA - TenCate Advanced Composites will be highlighting several new products and literature at JEC 2009 in booth #R46.

New Literature for 2009 - includes a twenty one page Aerospace Selector Guide highlighting TenCate's prepregs, resins, adhesives and compression molding capabilities. The Selector Guide is organized by market segment including aircraft, satellites, radomes, interiors, high temperature applications and compression molded parts. A download is available on www.tencate.com



New Products for 2009 include:

New Epoxy Prepreg for Space and Satellite Applications

RS-36 – is a new 350°F/177°C epoxy prepreg designed for satellite structure. It offers outstanding moisture resistance and low outgassing. It is designed as a value-based material alternative over cyanate ester prepregs. RS-36 has flight heritage on multiple DOD and commercial satellites in a variety of structure. RS-36 features a 379°F/193°C Tg and with a 90 minute cure at 177°F/350°F. Selected data below on M55JB, 2x2 twill 6K fiber.

Property	Test Method	Condition	Value
Tensile Strength	ASTM D 3039	RTD	101.6 ksi / 700MPa
Tensile Modulus	ASTM D 3039	RTD	22.5 Msi / 155 GPa
Compression Strength	SACRM SRM1	RTD	56.8 ksi / 392 MPa
Compression Modulus	SACRM SRM1	RTD	19.1 Msi / 132 GPa
ILSS	ASTM D 2344	RTD	7.0 ksi / 48 MPa
In-Plane Shear Strength	ASTM D 3518	RTD	10.1 ksi / 69 MPa



New Toughened Epoxy Hybrid Prepreg for Aircraft Interiors

TC550 – is a new toughened epoxy hybrid prepreg designed for aircraft interiors and ducts. It is a non-halogenated, non-phenolic system that meets all EU requirements with respect to REACH, and banned, targeted and restricted substances. It meets 12 and 60 second vertical burn requirements, and passes NBS flaming mode optical smoke density. The cure temperature of this system is 280°F (138°C) for 75 minutes.

Flammability Properties	Results	
<u>12 second vertical burn</u>		
Self Extinguish Time	0 seconds	Pass
Burn Length	2.7 inches	Pass
Drip	0 drip	Pass
4 minute optical smoke density	< 55	Pass
<u>Toxic Gas</u>		
HCN – 20 ppm limit	<1	Pass
CO – 300 ppm limit	100 ppm	Pass
HF – 10 ppm limit	<5ppm	Pass
NO _x – 40 ppm limit	10 ppm	Pass
SO ₂ /H ₂ S – 10 ppm limit	< 1 ppm	Pass

Recent product updates are as follows:

Cetex[®] Thermo-Lite[®] PEEK-based UD tapes

Cetex[®] Thermo-Lite[®] TC1200 – TC1200 is a PEEK UD tape currently being evaluated for several new aerospace applications. Cetex[®] Thermo-Lite[®] TC1200 is currently in qualification on a primary structure within a rotary wing military aircraft providing weight savings and durability improvements. TC1200 is produced in Morgan Hill, CA on TenCate’s new aerospace grade thermoplastic unitape line.



Thermoplastic composite unitapes provide short thermoforming processing cycles of 5-10 minutes. Thermoplastics also provide material benefits such as ambient temperature storage, fire retardancy, impact resistance and low moisture absorption. Cetex[®] Thermo-Lite[®] TC1200 is offered on a variety of carbon, glass and aramid fibers.

Data on AS-4 carbon fiber, 3K, 146 gsm.

Property	Test Method	Condition	Value
Tensile Strength	ASTM D 3039	RTD	330 ksi (2280 MPa)
Tensile Modulus	ASTM D 3039	RTD	19.4 Msi (134 GPa)
Compression Strength	ASTM D 6641	RTD	159 ksi (1100 MPa)
Compression Modulus	ASTM D 3410	RTD	17.7 Msi (122 GPa)
ILSS	ASTM D 2344	RTD	13.2 ksi (91 MPa)



NCAMP (Design Data Base) Qualification of TC250

TC250 is a toughened 250°F/121°C service epoxy currently in NCAMP “B” basis design allowable NCAMP sponsored test program. This prepreg is designed for vacuum bag curing (out of autoclave), and provides excellent structural properties at higher Tg’s. TC250 is designed to meet the needs of the general aviation, unmanned vehicle and business aircraft markets in primary and secondary structure. Qualification is expected to be completed 4Q 2009.

TC250 product features include:

- Dry Tg of 285°F (140°C), Wet Tg of 257°F (125°C)
- Designed for vacuum bag processing with low void content under low pressure cure
- Cure schedule is one hour at 190°F (88°C), followed by two hours at 265°F (130°C)

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TenCate Advanced Composites is a leading aerospace thermoset and thermoplastic prepreg supplier. TenCate’s prepreps are used in commercial aircraft, satellites, helicopters, general aviation, aircraft interiors, radomes and unmanned vehicles. TenCate’s Cetex line of thermoplastic prepreps are widely used in aerospace with over six tons on each Airbus A380. Cetex thermoplastic laminates are qualified and used on most commercial aircraft.

TenCate www.tencate.com is a multinational company which combines textile technology and chemical processes in developing and manufacturing special materials. Its materials can be divided into four areas of application: safety & protection, space & aerospace, sport & leisure, and environment & infrastructure. The company has world leading positions in protective fabrics, space and aerospace composites, armor composites, geosynthetics and synthetic turf. TenCate is listed on NYSE Euronext.

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