

# NANO-LITE

NANO-ENGINEERED EPOXY PRE-PREG



**NANO-LITE**  
*NI25L is a nano-engineered epoxy prepreg*



# NANO-LITE PRE-PREGS

NANO-TECH LABORATORIES DEVELOPED A FAMILY OF NANO-ENGINEERED PRE-PREGS, NAMED NANO-LITE (N125L & N140L), CONSISTING OF REINFORCEMENTS PRE-IMPREGNATED WITH A NANO EPOXY RESIN SYSTEM THAT COMBINE EXTREME LIGHTNESS AND EXCELLENT MECHANICAL PERFORMANCES



NANO-LITE  
NANO-ENGINEERED PRE-PREGS





# NANO DISPERSION

**NANO-TECH** DEVELOPED A PATENTED DISPERSION METHOD TO UNIFORMLY INTEGRATE NANO CHARGES (CARBON NANO TUBES – CNTs) INTO THE RESIN

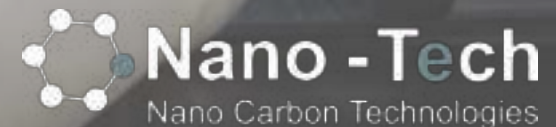
CNTs IMPROVE THE MECHANICAL (COMPRESSION AND TOUGHNESS) PROPERTIES OF THE RESIN

CONTENT OF RESIN (RC%) IS LOW DUE TO THE PECULIAR RHOLOGY OF THE RESIN, GIVEN BY CNTs

THE RESULT IS A WEIGHT REDUCTION UP TO 12% OVER MAIN COMPETITORS, MAINTAINING AN EXCELLENT TACK AND WORKABILITY



NANO-LITE  
NANO CARBON TECHNOLOGIES



# TECHNICAL CHARACTERISTICS

photographe : [www.pierrelesueur.com](http://www.pierrelesueur.com)

## N125L

WORKING TEMPERATURE (TG) 125°C  
EXTREEME COMPOSITE COMPONENTS LIGHTNESS  
GOOD MECHANICAL/COMPRESSIVE PERFORMANCE  
CURING 120°C/150°C  
PROCESSING WITH AUTOCLAVE/PRESS MOLDING  
HIGH DRAPE AND TACK  
EXCELLENT ADHESION TO CORE IN SANDWICH STRUCTURES



NANO-LITE  
N125L is a nano carbon based



# TECHNICAL CHARACTERISTICS

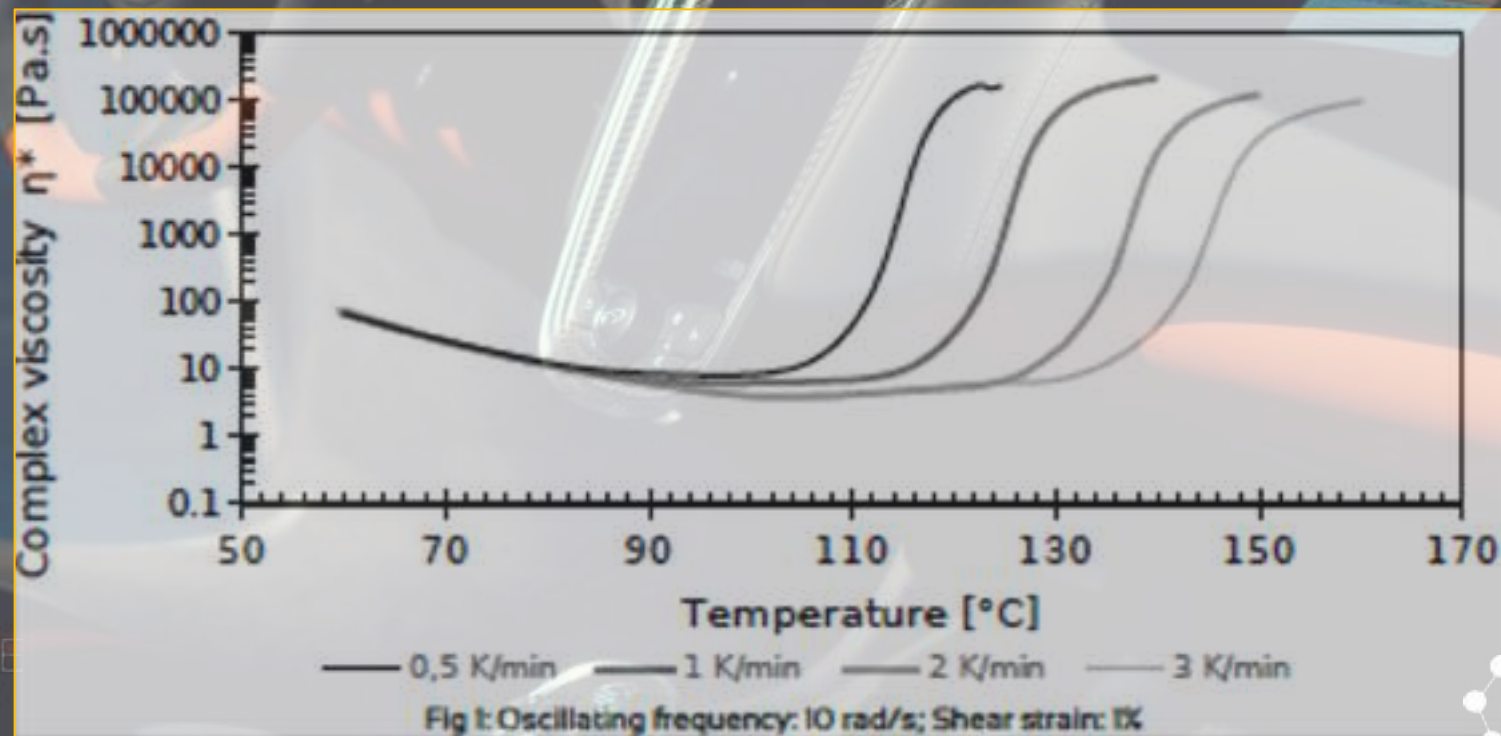
N140L

WORKING TEMPERATURE (TG) 138°C  
EXTREEME COMPOSITE COMPONENTS LIGHTNESS  
GOOD MECHANICAL/COMPRESSIVE PERFORMANCE  
FLEXIBLE CURING 120°C/150°C  
PROCESSING WITH AUTOCLAVE/PRESS MOLDING  
MEDIUM TO HIGH TACK  
VERY HIGH FIBER VOLUME FRACTION



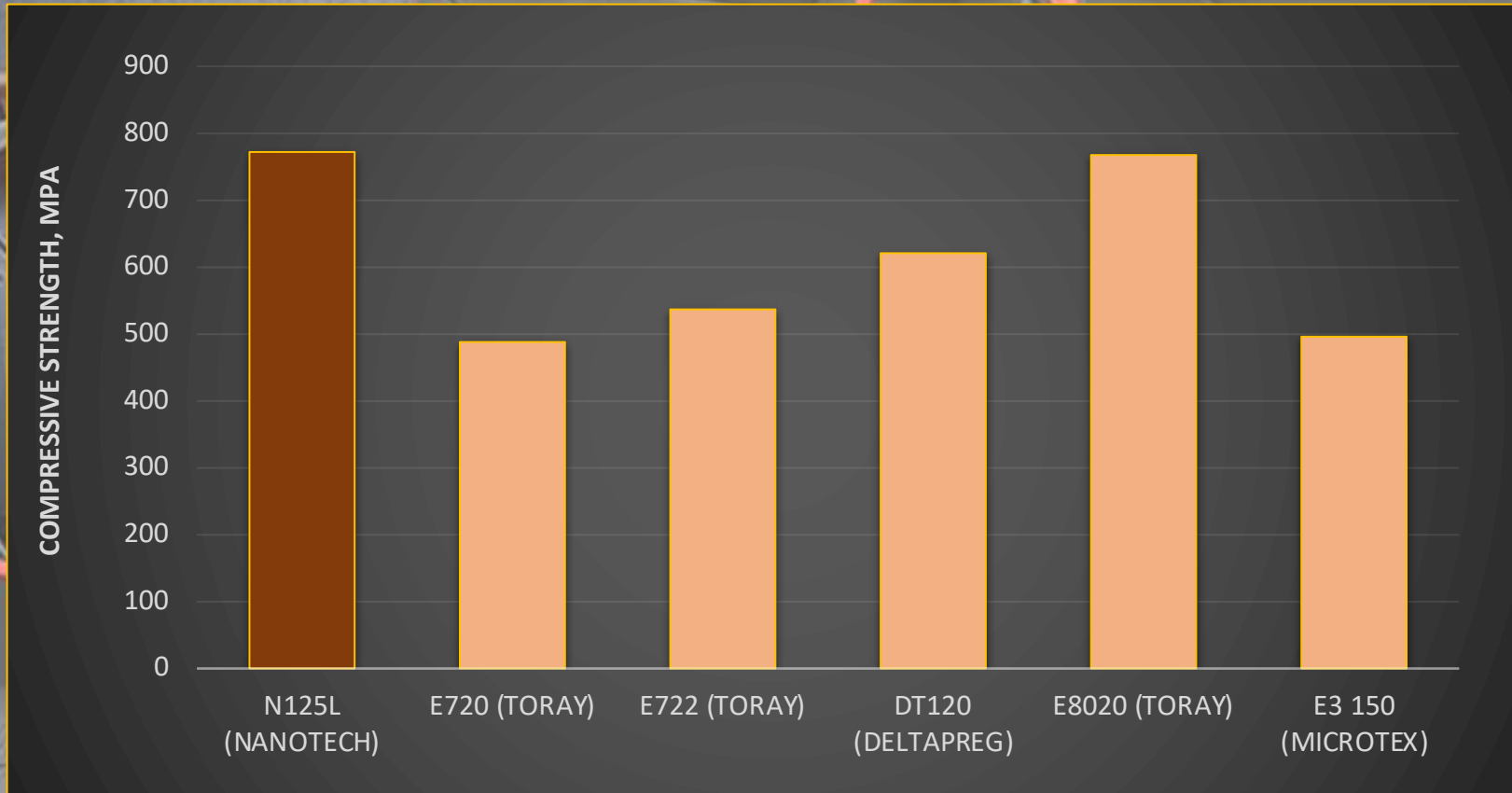
# MATRIX PROPERTIES (N125L)

Measurement	Method	Value
Glass Transition Temperature, °C	DSC-ASTM D3418	120
Enthalpy $\Delta H$ , J/g	DSC-ASTM D3418	226,3
Resin density, g/cm <sup>3</sup>		1,18
Tach		High



NANO-LITE  
N125L is a high performance  
epoxy resin

# COMPRESSION STRENGTH (N125L)

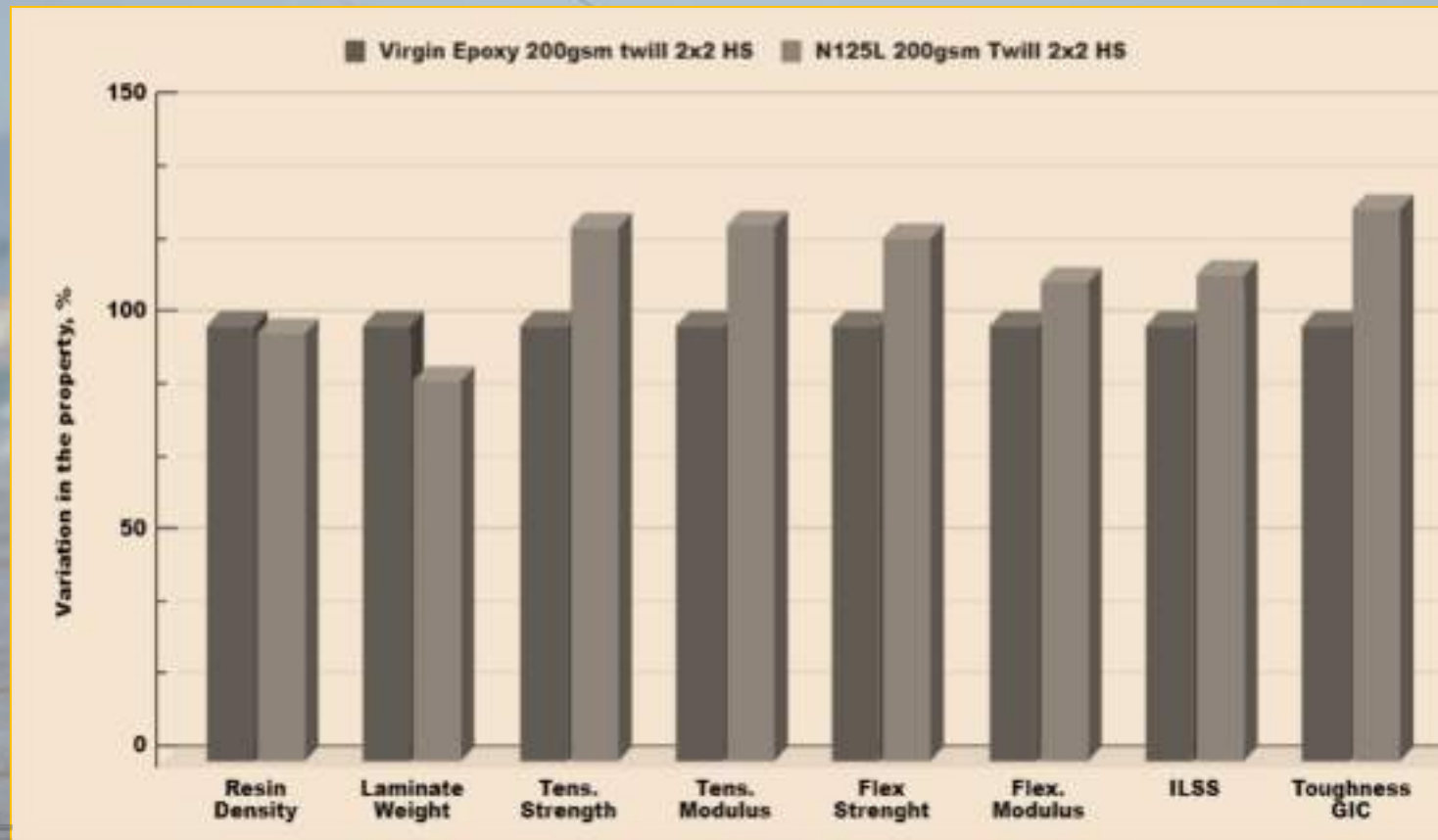


NANO-LITE  
N125L is nano-engineered



# MECHANICAL PROPERTIES (N125L)

COMPARISON WITH VIRGIN RESIN PRE-PREG



NANO-LITE  
N125L is a nano-engineered  
epoxy prepreg



# MECHANICAL PROPERTIES (N125L)

COMPARISON WITH VIRGIN RESIN PRE-PREG

WITH 200GSM TWILL 2X2 HS FIBER

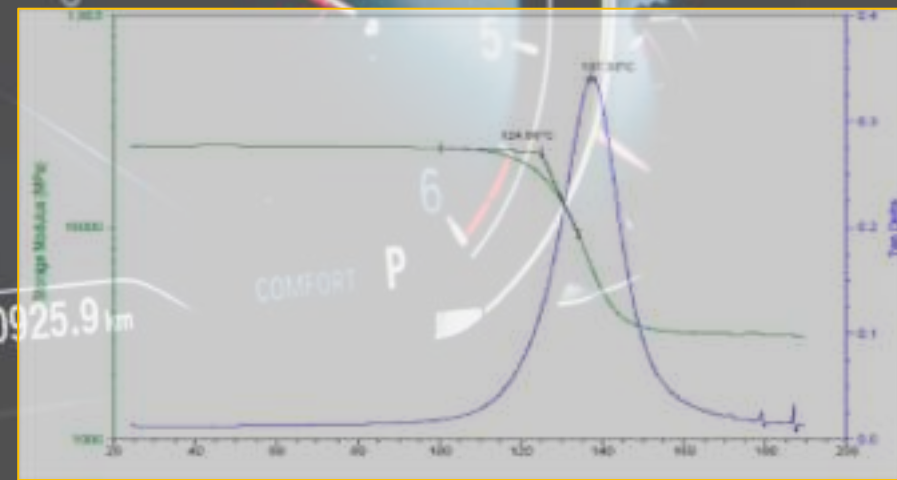
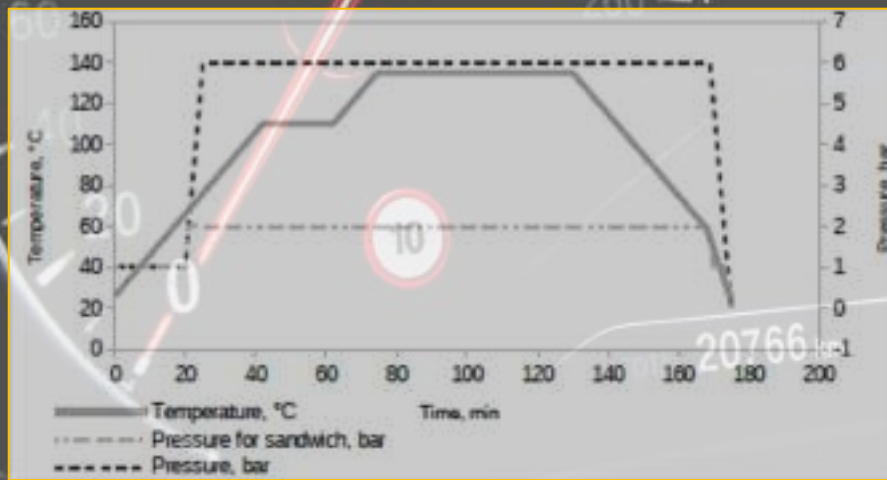
Property	Method	Unit	Value CF200T2HS
Tensile Modulus 0°	ASTM 3039	GPa	59
Tensile Strength 0°	ASTM 3039	MPa	794
Flexural Modulus 0°	ASTM D790	GPa	46
Flexural Strength 0°	ASTM D790	MPa	969
Compression Modulus 0°	ASTM D6641	GPa	-
Compression Strength 0°	ASTM D695	MPa	614
Interlaminar Shear Strength	ASTM D2344	MPa	77



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N125L is a nano-engineered  
epoxy prepreg

# CURING CYCLE (N125L)

Step	Initial Temperature °C	Final Temperature °C	Time min	Heating rate to isothermal °C/min	Pressure bar
1	25	110	-	2+3	5+7
2	110	-	20	2-	5-7
3	110	135	-	2+3	5+7
4	135	-	60	-	5+7
5	135	60	-	2+3	5+7
6	60	25	-	3-5	5+7



NANO-LITE  
N125L



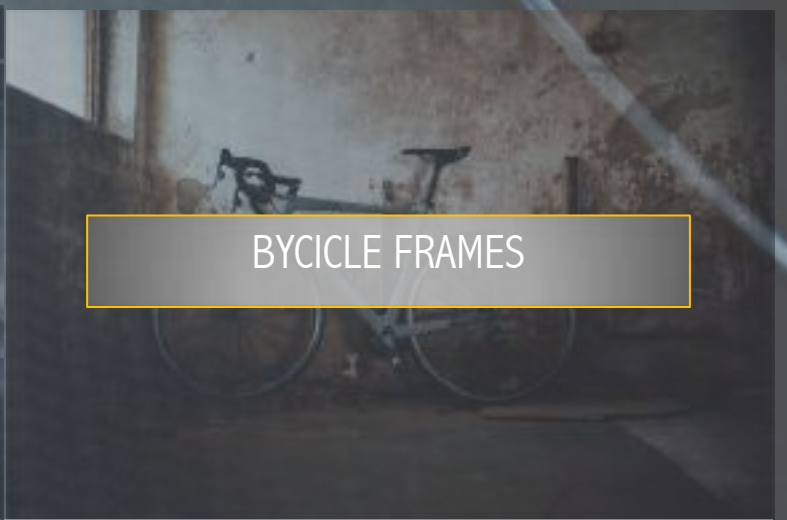
# APPLICATIONS



AUTOMOTIVE CHASSIS



CAR RACING SEATS



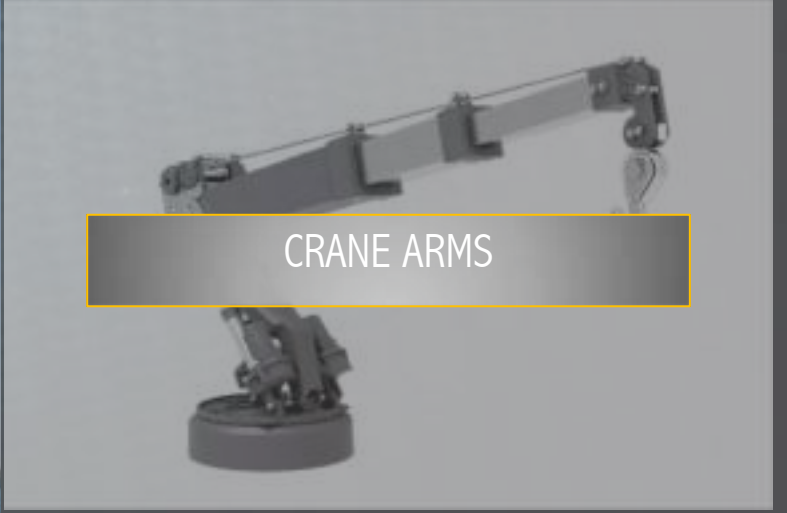
BYCICLE FRAMES



NAUTICAL MASS & BOOMS



FOILS



CRANE ARMS



NANO-LITE  
NI25L is a nano-carbon fiber material  
with a strength of 2500MPa