PITCH BASED CARBON FIBER

Granoc Yarn XN Series

		XN-60-60S CN-60-60S	XN-60-A2S CN-60-A2S	XN-80-60S CN-80-60S	XN-80-A2S CN-80-A2S	XN-90-60S CN-90-60S
Tensile Strength	ksi kgf/mm^2 MPa	500 350 3430	500 350 3430	500 350 3430	500 350 3430	500 350 3430
Tensile Modulus	msi $10^3 kgf/mm^2$ GPa	90 63 620	90 63 620	114 80 780	114 80 780	125 88 860
Ultimate Elongation	%	0.6	0.6	0.5	0.5	0.4
Density	g/cm^3	2.12	2.12	2.17	2.17	2.19
Filament Diameter	Micron	10	10	10	10	10
Filaments per Yarn		6000	12000	6000	12000	6000
Yield	g/km	890	1780	890	1780	880
CTE	$10^{-6}/K$	-1.4	-1.4	-1.5	-1.5	-1.5
Thermal Conductivity	W/m·K	180	180	320	320	500
Electrical Resistivity	10^{-4} ohm cm	7	7	5	5	3

Notes : (1) Above figures are typical values at room temperature, not guaranteed values.
(2) The tensile strength and tensile modulus are measured with the impregnated strand test.
(3) These data may be revised if necessary.

Nippon Graphite Fiber Corporation
Website : www.ngfworld.com

Mechanical Properties of Composite Laminate

		XN-60(CN-60)	XN-80(CN-80)	XN-90(CN-90)
Composite Properties				
0°Tensile Strength	MPa	1800	1800	1800
Tensile Modulus	GPa	400	450	550
Elongation	%	0.37	0.31	0.33
90°Tensile Strength	MPa	32	33	25
Tensile Modulus	GPa	5.4	5.6	5.4
Elongation	%	0.6	0.60	0.47
Vf	%	52	56	55
0°Flexural Strength	MPa	790	720	690
Flexural Modulus	GPa	313	360	457
0°Compressive Strength	MPa	400	380	370
Compressive Modulus	GPa	340	407	540
ILSS	MPa	81	80	60

※Composite properties are normalized to 60 %.