



Global Thermoset Composite Solutions

**Norplex-Micarta Laminates Cross Reference for  
N-M Grades – ASTM & NEMA Standards – Military Specification – IPC Specification &  
International Electrotechnical Commission (IEC) Standards**

Norplex-Micarta Grade	ASTM D709 - NEMA LI-1-1998	Military - MIL-I- 24768 / "Sheet" - "Type"	IPC 4101/ "Sheet"	International Electrotechnical Commission <sup>1</sup> IEC 60893 – Part 3 - "Sheet" – "Type"
<b>Norplex-Micarta Sheet Grades</b>				
NP130, NP130HF, NP510A	FR-4	/ 27 – GEE-F	/21	- 2 – EP GC 202
MC511FR	FR-5	/ 28 – GEB-F		- 2 – EP GC 202
NP504, NP515LS	G-3	/ 18 – GPG	-	- 4 – PF GC 201
NP509	G-5	/ 8 – GMG	-	- 3 – MF GC 201
MC507U <sup>2</sup>	G-7	/ 17 – GSG	-	- 6 – SI GC 201
NP509	G-9	/ 1 – GME	-	- 3 – MF GC 201
NP500A	G-10	/ 2 – GEE	/20	- 2 – EP GC 201
MC511A, MC511AF, NP511, NP511EM, NP572	G-11	/ 3 – GEB	-	- 2 – EP GC 203
P95 – GPY	-	-	-	- 7 – PI GC 301
NP572	G-11	/ 3 – GEB	-	- 7 – EP GC 308
NP310, NP310HT, NP342	C	/ 16 – FBM	-	- 4 – PF CC 201
NP310E	CE	/ 14 – FBG	-	- 4 – PF CC 202
NP318	CF	-	-	- 4 – PF CC 203
NP320	L	/ 15 – FBI	-	- 4 – PF CC 203
MC320LE, NP320E	LE	/ 13 – FBE	-	- 4 – PF CC 204
NP610	X	/ 12 – PBM	-	- 4 – PF CP 201
NP611, NP611R, NP660	XP	/ 19 – PBM-P	-	- 4 – PF CP 201
NP612, NP625, NP664	XPC	/ 20 – PBM-PC	-	- 4 – PF CP 207
NP629	XX	/ 11 – PBG	-	- 4 – PF CP 203
NP101	N-1	/ 9 – NPG	-	-
<b>Norplex-Micarta Rod Grades</b>				
RM130	FR-4	/ 27, Type GEE-F	--	EP GC 43
RM500A	G-10	/ 2, Type GEE	--	EP GC 41
RM504	G-3 <sup>3</sup>	/ 18, Type GPG	--	PF GC 201
RM505	G-5	/ 8, Type GMG	--	---
RM511A	G-10 <sup>4</sup>	/ 2, Type GEE	--	EP GC 42
RM310	C	/ 16, Type FBM	--	PF CC 42



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RM310E	CE	/ 14, Type FBG	--	PF CC 42
RM320, RM320H	L	/ 15, Type FBI	--	PF CC 41
RM320LE	LE	/ 13, Type FBE	--	PF CC 41
RM629	XX	/ 11, Type PBG	--	PF CP 43
RM630	XXX	/ 10, Type PBE	--	PF CP 44
<b>Norplex-Micarta Tube Grades</b>				
RT130, RT130M, RT130X	FR-4	/ 27, Type GEE-F	--	EP GC 23
RT504, RT504F	G-3 <sup>3</sup>	/ 18, Type GPG	--	PF GC 21
RT505, RT505F	G-5	/ 8, Type GMG	--	---
RT507, RT507F	G-7	/ 17, Type GSG	--	SI GC 21
RT509, RT509F	G-9	/ 1, Type GME	--	MF GC 21
RT500, RT500F, RT500M, RT500X, RT571	G-10	/ 2, Type GEE	--	EP GC 21
RT511, RT511H, RT511F, RT511M	G-10 <sup>4</sup>	/ 2, Type GEE	--	EP GC 22
RT310, RT310H, RT310S, RT342, RT342H	C	/ 16, Type FBM	--	PF CC 22
RTB320, RTB320H, RTB320S	LE	/ 13, Type FBE	--	PF CC 21
RTB320X, RTB320Z	LE	/ 13, Type FBE <sup>5</sup>	--	PF CC 21
RT610	X	/ 12, Type PBM	--	PF CP 21
RT628, RT628H, RT629	XX	/ 11, Type PBG	--	PF CP 23
RT630, RT630H, RT630S	XXX	/ 10, Type PBE	--	PF CP 24

<sup>1</sup> Some Norplex-Micarta materials have not been tested to the IEC Standard listed. The standard indicated may be for reference only. Please refer to the Grade specific Technical Data Bulletin.

<sup>2</sup> MC507U does not meet all of the electrical properties of either NEMA G-7 or MIL-I-24768/17 - GSG

<sup>3</sup> Although G-3 rod and tubing grades are recognized by NEMA, ASTM and MIL-I-24768 standards as a material form, property requirements are undefined at this time.

<sup>4</sup> NEMA Standard LI-1 and MIL-I-24768 do not recognize a high temperature epoxy glass rod and convolute rolled tube form, but, these materials are manufactured with a high temperature epoxy resin system, commonly used for NEMA G-11 and MIL-I-24768/27, type GEB sheet products, and do have improved thermal properties at elevated temperatures.

<sup>5</sup> Also complies with Federal Specification WW-L-2887, FBEFW Type