

Laminate Cross-Reference Chart

NEMA grades cross-referenced to governmental agency specifications.



NEMA Grade	Military Spec. Type	JAN-P-13 Type LTS	Navy 17-P-5 Type	Army 71-484 Type	ASTM (D-709) Type	MIL-I-24768	Federal Spec. L-L-31 (Formerly HPP-256)		AAF Spec 12032 Grade	Grade Description
							Type	Grade		
-	PMB	M-1	PBM	I	I	/12	I	X	-----	Paper Filler-Hard Phenolic Resin
X	----- ¹	M-2	PBM-1	I	I	----	I	X	----	
XP	PMB-P	E-1	PBP	----	I-1	/19	I	P	----	Paper Filler-Plasticized Phenolic Resin
XPC	PBM-PC	----	----	----	I	/20	I	PC	----	Paper Filler - Elasticized Phenolic Resin
XX	PBG	E-2	PBG	I	I	/11	I	XX	----	Paper Filler-Hard Phenolic Resin
XXP	PBM-P	E-3	----	----	1-2	/21	I	XXP	----	Paper Filler-Plasticized Phenolic Resin-For Hot Punching
XXX	PBE	E-4	PBE	I	I-4	/10	I	XXX	----	Paper Filler-Hard Phenolic Resin
FR-2	PBE-PCF	----	----	----	----	/25	----	----	----	Paper Filler-Plasticized Phenolic Resin-For Hot Punching
XXXP	PBE-P	E-5	PBE	----	I-3	/22	I	XXXP	----	
XXXP-C	----	----	----	----	----	/23	----	----	----	
C	FBM	M-4	FBM	II	II	/16	II	C	----	Medium Weight Cotton Fabric Filler-Hard Phenolic Resin
CE	FBG	EM-1	FBG	II	II-5	/14	II	CE	----	
----	----	----	----	----	----	----	----	----	CG	Medium Weight Cotton Fabric Filler-Hard Phenolic Resin With Graphite Inclusion
L	FBI	M-3	FBI	II	II	/15	II	L	----	Fine Weave Cotton Fabric Filler Hard Phenolic Resin
LE	FBE	EM-2	FBE	II	II-5	/13	II	LE	----	
----	----	----	----	----	----	----	----	----	LG	Fine Weave Cotton Fabric Filler-Hard Phenolic Resin With Graphite Inclusion
A	PBA	H-1	PBH	----	III	----	III	A	----	DISCONTINUED No longer manufactured
AA	FBA	MH-1	FBH	----	III	----	III	AA	----	DISCONTINUED No longer manufactured
----	----	M-5	GBM GBH	----	IV	----	IV	----	----	Staple Fibre Glass Cloth Filler-Melamine Resin
G-3	GPG	----	----	----	----	/18	IV	G-3	----	Glass Cloth Filler Phenolic Resin
G-5	GMG	MG-1	GMG	----	IV	/8	IV	G-5	----	Continuous Filament Glass Cloth Filler-Melamine Resin
G-7	GSG	----	GSG	----	IV	/17	IV	G-7	----	Continuous Filament Glass Cloth Filler-Silicone Resin
G-9	GME	----	----	----	IV	/1	IV	----	----	Glass Cloth Filler Melamine Resin
G-10	GEE	----	----	----	IV	/2	----	----	----	Continuous Filament Glass Cloth Filler-Epoxy Resin
G-11	GEB	----	----	----	IV	/3	----	----	----	Continuous Filament Glass Cloth Filler-Epoxy Resin
FR-5	GEB-F	----	----	----	IV	/28	IV	----	----	Continuous Filament Glass Cloth Filler-Epoxy Resin
FR-4	GEE-F	----	----	----	IV	/27	IV	----	----	Glass Cloth Filler Epoxy FR Resin
N-1	NPG	----	----	----	V	/9	V	N-1	----	Nylon Fabric Filler-Phenolic Resin
----	CFI-20	----	----	III	----	----	III	----	----	Chopped Medium Weight Cotton Fabric-Hard Phenolic Resin
----	PP	----	----	----	----	----	----	----	----	Grade XXXP Copper Clad
CPF	----	----	----	----	----	----	----	----	----	Med. Weight Cotton Fabric Filler-Post Forming Phenolic Resin
FR-3	PEE	----	----	----	----	/26	----	----	----	Paper Filler-Flame Retardant Epoxy Resin

¹ Grade X is additionally designated I (Cross Laminated) and II (Parallel Laminated).
Column placement pending confirmation. "-----" indicates no corresponding designation.