Norplex-Micarta Announces BR60 and BR70 Laminate Series

POSTVILLE, IA, USA – Norplex-Micarta, the leading manufacturer of high performance thermoset composites, announces its BR60 and BR70 laminate series. With the highest load capacities of any bearing material, these composites are specifically designed for heavy load-bearing applications in ships, metal-rolling mills, and off-road construction equipment.

The load-bearing properties of these laminates are better than those of high-performance thermoplastics and equivalent to those of brass and bronze. But unlike these metal options, the high performance thermoset composites will not seize to metal shafts or score them, speeding up bearing replacement and reducing equipment downtime and cost of replacement. In addition, this laminate series will performs under continuous water exposure without losing strength.

The BR60 and BR70 laminates consist of multiple piles of heavy-weight canvas cloth saturated with phenolic resin system, modified disulfide, which provides internal lubrication to reduce frictional heat generation and wear of metal shafts on the bearing. The pre-preg piles are then laminated under heat and pressure to produce the thermoset composite material.

BR70 is a red colored composite made from a 24 oz/sq. yd canvas which is passed through the treater twice to insure impregnation of the fibers and to obtain the resin content desired for optimal performance. The resin system is a phenolic with good impregnation qualities and cured hardness. BR70 is designed for highly loaded bearing applications, where the lubrication is provided by oil, water or a mixture.

			UNITS	VALUE		
				Thickness Tested		
				0.500″		
PHYSICAL PROPERTIES						
Specific Gravity *(ASTM D792)*			-	1.42		
Rockwell Hardness *(ASTM D785)*		0.250″ Build-up	M Scale	95		
Moisture Absorption *(ASTM D570)*	Condition A		%	0.06		
Flexural Strength *(ASTM D790)*	Condition A	LW / CW	psi (Mpa)	20,200 / 13,600 (139.3) / (93.8)		
Flexural Modulus *(ASTM D790)*	Condition A	LW / CW	kpsi (Gpa)	1,358 / 1,034 (9.4) / (7.1)		
Tensile Strength *(ASTM D638)*	Condition A	LW / CW	psi (Mpa)	11,400 / 11,300 (78.6) / (77.9)		
Izod Impact Strength *(ASTM D256)*	Condition A	LW / CW	ft-lb/in (J/cm)			

	Condition E-48/50 LW / CW	ft-lb/in (J/cm)	6.36 / 2.83 (3.39) / (1.51)		
Compressive Strength *(ASTM D695)*	Condition A Flatwise	psi (Mpa)	36,500 (251.7)		
Bonding Strength *(ASTM D229)*	Condition A	lb (kg)	2,300 (1,043.3)		
	Condition D-48/50	lb (kg)	2,100 (952.5)		
Shear Strength *(ASTM D732)*	Condition A Perpendicular	psi (Mpa)	13,900 (95.8)		

	UNITS	VALUE		
		Thickness Tested		
		0.500″		
THERMAL PROPERTIES				
Temperature Index [1] *(UL Bulletin 746b)* Electrical / Mechanical	°C	/ 125		
Coefficient of Thermal Expansion *(IPC-TM 650-2.4.24)* X-axis / Y-axis	"/"/°C x10^{-6}	19.5 / 27.6		
Flammability Rating *(UL Bulletin 94)* Condition A	Class	HB		

[1] This temperature is a recommendation only, and based upon experience in various applications. The maximum operating temperature is dependent upon the application and should be investigated prior to use.

This data, while believed to be accurate and based on reliable analytical methods, is for informational purposes only. The terms and conditions of the agreement under which it is sold will govern any sales of this product. Data supplied above are "typical values"; not to be considered "specification values".

To assure the material's performance is adequate for a specific application; customers should verify, independent of Norplex-Micarta, performance characteristics of interest.