

Neoform[®] Material Properties

Neoform[®] Material

NeoForm[®] compression-bonded magnet material is made of the powerful Nd-Fe-B material mixed into an epoxy binder. The mix is approximately 97 vol% magnet material to 3 vol% epoxy; much of the magnetic strength of the Nd-Fe-B material is retained. The manufacturing process involves crushing fully sintered Nd-Fe-B blocks into a fine powder, mixing with the epoxy binder, compression bonding the mixture in a press and curing the part in an oven. Since the material is formed by compression bonding, the dimensions vary +/- .002" or better for a given run.

Magnet Selection

NeoForm[®] material is isotropic, so it can be magnetized through any direction, including multi-polar arrangements. Because the material is in any epoxy binder, it can be machined on a mill or lathe. However, the material will not support a thread, so holes cannot be tapped.

NeoForm[®] material is often used to substantially reduce the size of designs that used ceramic magnet materials. Significant size reductions can be achieved because NeoForm[®] material is approximately 3 times stronger than ceramic magnet material. In addition, since NeoForm[®] material is isotropic, it can be magnetized multi-polar, such as a N-S-N-S pattern on the outer diameter of a ring.

NeoForm[®] material can be pressed into shapes with a cross-sectional area of up to 1 in². For example, blocks of 1" x 1" or 2" x 1/2" cross section can be pressed.

Material Grade	Magnetic Properties							
	Max Energy Product BH_{max}		Residual Induction B_r		Coercivity H_c		Intrinsic Coercivity H_{ci}	
	(MGOe)	(kJ/m ³)	(kG)	(mT)	(kOe)	(kA/m)	(kOe)	(kA/m)
Neoform[®]	10	80	6.9	690	5.2	414	9.0	716

Material Family	Physical Properties					
	Density		Curie Temperature		Max. Service Temperature	
	lb/in ³	g/cm ³	°C	°F	°C	°F
Neoform[®]	0.218	6.0	310	590	150	300

Neoform® Second Quadrant Demagnetization Curves

