

AK Steel TRAN-COR® H-1 CARLITE® DR® Grain Oriented Electrical Steel

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal

Material Notes:

TRAN-COR H CARLITE® high permeability electrical steels offer an outstanding degree of grain orientation, This combination of higher permeability with low residual stress offers the potential for lower core losses and less noisy transformer core structures, particularly at higher operating inductions, when compared to conventional grain oriented electrical steels. The core loss characteristics are further enhanced in the TRAN-COR H CARLITE DR® (Domain Refined) products where laser scribing is employed. In this process, a precisely focused laser beam is rapidly scanned across the steel surface. The micro-strain imparted into the material forces the pre-existing magnetic domains to subdivide. The finer domain structure reduces the distance that the domain walls must move during AC magnetization, thereby reducing eddy current losses. The result is far lower core loss than possible with conventional grain oriented electrical steels of comparable thickness. TRAN-COR H CARLITE products are suitable for all types of transformers while TRAN-COR H DR products are suitable for those types of transformers where a stress relief annealing treatment of the magnetic core is not used. Stress relief annealing will result in the eradication of the effect provided by the laser treatment and will result in a significant increase in core loss. Information provided by AK Steel.

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-TRAN-COR-H-1-CARLITE-DR-Grain-Oriented-Electrical-Steel.php

Physical Properties	Metric	English	Comments
Density	7.65 g/cc	0.276 lb/in ³	
Thickness	240 - 280 microns	9.45 - 11.0 mil	
	270 microns	10.6 mil	Nominal

Mechanical Properties	Metric	English	Comments
Knoop Microhardness	173	173	
Hardness, Rockwell B	83	83	
Tensile Strength, Ultimate	359 MPa	52100 psi	In rolling direction
Tensile Strength, Yield	345 MPa	50000 psi	In rolling direction
Elongation at Break	11 %	11 %	In 2", rolling direction
Modulus of Elasticity	113.8 GPa	16510 ksi	In rolling direction
	138 GPa	20000 ksi	At 20° to rolling direction
	203 GPa	29400 ksi	At 90° to rolling direction
	241 GPa	35000 ksi	At 45° to rolling direction
	276 GPa	40000 ksi	At 55° to rolling direction

Electrical Properties	Metric	English	Comments
Exciting Power (RMS)	0.00158 RMS AT/cm	0.00250 RMS VA/lb	
	@Magnetic Field 0.100 T, Frequency 50.0 Hz	@Magnetic Field 0.100 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.00196 RMS AT/cm	0.00310 RMS VA/lb	
	@Magnetic Field 0.100 T, Frequency 60.0 Hz	@Magnetic Field 0.100 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.00550 RMS AT/cm	0.00870 RMS VA/lb	
	@Magnetic Field 0.200 T, Frequency 50.0 Hz	@Magnetic Field 0.200 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.00702 RMS AT/cm	0.0111 RMS VA/lb	
	@Magnetic Field 0.200 T, Frequency 60.0 Hz	@Magnetic Field 0.200 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0116 RMS AT/cm	0.0184 RMS VA/lb	
	@Magnetic Field 0.300 T, Frequency 50.0 Hz	@Magnetic Field 0.300 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0149 RMS AT/cm	0.0235 RMS VA/lb	
	@Magnetic Field 0.300 T, Frequency 60.0 Hz	@Magnetic Field 0.300 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0196 RMS AT/cm	0.0310 RMS VA/lb	
	@Magnetic Field 0.400 T, Frequency 50.0 Hz	@Magnetic Field 0.400 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0251 RMS AT/cm	0.0397 RMS VA/lb	
	@Magnetic Field 0.400 T, Frequency 60.0 Hz	@Magnetic Field 0.400 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0292 RMS AT/cm	0.0461 RMS VA/lb	
	@Magnetic Field 0.500 T, Frequency 50.0 Hz	@Magnetic Field 0.500 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0376 RMS AT/cm	0.0594 RMS VA/lb	
	@Magnetic Field 0.500 T, Frequency 60.0 Hz	@Magnetic Field 0.500 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0403 RMS AT/cm	0.0637 RMS VA/lb	

Electrical Properties	Metric	English	Comments
	@Magnetic Field 0.600 T, Frequency 50.0 Hz	@Magnetic Field 0.600 T, Frequency 50.0 Hz	1, 0.27 mm
	0.0520 RMS AT/cm	0.0822 RMS VA/lb	
	@Magnetic Field 0.600 T, Frequency 60.0 Hz	@Magnetic Field 0.600 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0531 RMS AT/cm	0.0839 RMS VA/lb	
	@Magnetic Field 0.700 T, Frequency 50.0 Hz	@Magnetic Field 0.700 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.06757 RMS AT/cm	0.1068 RMS VA/lb	
	@Magnetic Field 0.800 T, Frequency 50.0 Hz	@Magnetic Field 0.800 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.06846 RMS AT/cm	0.1082 RMS VA/lb	
	@Magnetic Field 0.700 T, Frequency 60.0 Hz	@Magnetic Field 0.700 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.08396 RMS AT/cm	0.1327 RMS VA/lb	
	@Magnetic Field 0.900 T, Frequency 50.0 Hz	@Magnetic Field 0.900 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.08712 RMS AT/cm	0.1377 RMS VA/lb	
	@Magnetic Field 0.800 T, Frequency 60.0 Hz	@Magnetic Field 0.800 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.1033 RMS AT/cm	0.1632 RMS VA/lb	
	@Magnetic Field 1.00 T, Frequency 50.0 Hz	@Magnetic Field 1.00 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.1084 RMS AT/cm	0.1714 RMS VA/lb	
	@Magnetic Field 0.900 T, Frequency 60.0 Hz	@Magnetic Field 0.900 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.1262 RMS AT/cm	0.1995 RMS VA/lb	
	@Magnetic Field 1.10 T, Frequency 50.0 Hz	@Magnetic Field 1.10 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.1332 RMS AT/cm	0.2105 RMS VA/lb	
	@Magnetic Field 1.00 T, Frequency 60.0 Hz	@Magnetic Field 1.00 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm

Electrical Properties	Metric ¹ RMS AT/cm	English ² RMS VA/lb	Comments
	@Magnetic Field 1.20 T, Frequency 50.0 Hz	@Magnetic Field 1.20 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.1625 RMS AT/cm	0.2568 RMS VA/lb	
	@Magnetic Field 1.10 T, Frequency 60.0 Hz	@Magnetic Field 1.10 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.1870 RMS AT/cm	0.2955 RMS VA/lb	
	@Magnetic Field 1.30 T, Frequency 50.0 Hz	@Magnetic Field 1.30 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.1970 RMS AT/cm	0.3114 RMS VA/lb	
	@Magnetic Field 1.20 T, Frequency 60.0 Hz	@Magnetic Field 1.20 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.2269 RMS AT/cm	0.3586 RMS VA/lb	
	@Magnetic Field 1.40 T, Frequency 50.0 Hz	@Magnetic Field 1.40 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.2384 RMS AT/cm	0.3768 RMS VA/lb	
	@Magnetic Field 1.30 T, Frequency 60.0 Hz	@Magnetic Field 1.30 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.2743 RMS AT/cm	0.4336 RMS VA/lb	
	@Magnetic Field 1.50 T, Frequency 50.0 Hz	@Magnetic Field 1.50 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.2873 RMS AT/cm	0.4541 RMS VA/lb	
	@Magnetic Field 1.40 T, Frequency 60.0 Hz	@Magnetic Field 1.40 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.3342 RMS AT/cm	0.5282 RMS VA/lb	
	@Magnetic Field 1.60 T, Frequency 50.0 Hz	@Magnetic Field 1.60 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.3451 RMS AT/cm	0.5455 RMS VA/lb	
	@Magnetic Field 1.50 T, Frequency 60.0 Hz	@Magnetic Field 1.50 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.4179 RMS AT/cm	0.6605 RMS VA/lb	
	@Magnetic Field 1.60 T, Frequency 50.0 Hz	@Magnetic Field 1.60 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm

Electrical Properties	Metric	English	Comments
	0.4388 RMS AT/cm @Magnetic Field 1.70 T, Frequency 50.0 Hz	0.6936 RMS VA/lb @Magnetic Field 1.70 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.5427 RMS AT/cm @Magnetic Field 1.70 T, Frequency 60.0 Hz	0.8577 RMS VA/lb @Magnetic Field 1.70 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.759 RMS AT/cm @Magnetic Field 1.80 T, Frequency 50.0 Hz	1.20 RMS VA/lb @Magnetic Field 1.80 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.92317 RMS AT/cm @Magnetic Field 1.80 T, Frequency 60.0 Hz	1.4591 RMS VA/lb @Magnetic Field 1.80 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	2.6372 RMS AT/cm @Magnetic Field 1.90 T, Frequency 50.0 Hz	4.1682 RMS VA/lb @Magnetic Field 1.90 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	3.2067 RMS AT/cm @Magnetic Field 1.90 T, Frequency 60.0 Hz	5.0682 RMS VA/lb @Magnetic Field 1.90 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
Electrical Resistivity	0.0000500 ohm-cm	0.0000500 ohm-cm	

Magnetic Properties	Metric	English	Comments
Core Loss	0.00328 W/kg @Magnetic Field 0.100 T, Frequency 50.0 Hz	0.00149 W/lb @Magnetic Field 0.100 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.00441 W/kg @Magnetic Field 0.100 T, Frequency 60.0 Hz	0.00200 W/lb @Magnetic Field 0.100 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.01246 W/kg @Magnetic Field 0.200 T, Frequency 50.0 Hz	0.005652 W/lb @Magnetic Field 0.200 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0168 W/kg	0.00762 W/lb	

Magnetic Properties	@Magnetic Field 0.200 T, Metric Frequency 60.0 Hz	@Magnetic Field 0.200 T, English Frequency 60.0 Hz	ASTM A804, 0.27 mm Comments
	0.0274 W/kg	0.0124 W/lb	
	@Magnetic Field 0.300 T, Frequency 50.0 Hz	@Magnetic Field 0.300 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0370 W/kg	0.0168 W/lb	
	@Magnetic Field 0.300 T, Frequency 60.0 Hz	@Magnetic Field 0.300 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0479 W/kg	0.0217 W/lb	
	@Magnetic Field 0.400 T, Frequency 50.0 Hz	@Magnetic Field 0.400 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0647 W/kg	0.0293 W/lb	
	@Magnetic Field 0.400 T, Frequency 60.0 Hz	@Magnetic Field 0.400 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.0738 W/kg	0.0335 W/lb	
	@Magnetic Field 0.500 T, Frequency 50.0 Hz	@Magnetic Field 0.500 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm
	0.0996 W/kg	0.0452 W/lb	
	@Magnetic Field 0.500 T, Frequency 60.0 Hz	@Magnetic Field 0.500 T, Frequency 60.0 Hz	ASTM A804, 0.27 mm
	0.105 W/kg	0.0476 W/lb	
	@Magnetic Field 0.600 T, Frequency 50.0 Hz	@Magnetic Field 0.600 T, Frequency 50.0 Hz	ASTM A804, 0.27 mm

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China