EnduroTemp™ 260+

Magnet Wire | Winding Wire

Product Data Sheet

NEMA	Exceeds NEMA MW 16 Requirements
Thermal Class	260°C (UL Listing: E32638)
Conductor	Copper
Shape	Round (Refer to Sales or Marketing for availability of Square or Rectangular)
Insulation Material	Polyimide/Polyamide-imide
Size Range	Round: 4-33 AWG (Refer to Sales or Marketing for availability of Square or Rectangular)
Key Applications	Partial discharge environments High temperature applications Automotive HEV/EV applications Traction motors Down hole pump motors

PRODUCT DESCRIPTION

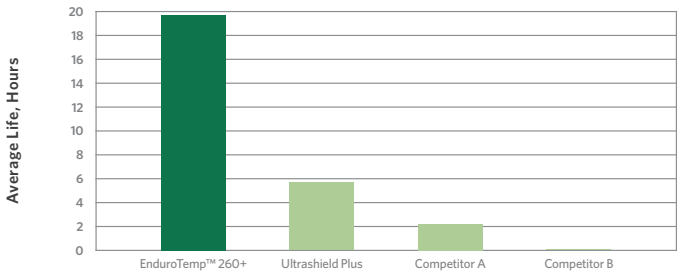
EnduroTemp™ 260+ uses Essex Furukawa proprietary Polyimide formulation combined with a proprietary self-lubricating top coat. This product not only complies but clearly exceeds NEMA MW 16 with a Thermal Endurance of 265°C per ASTM D2307. The unique combination also provides high abrasion resistance to reduce damage in winding & assembly process. The enamel is specially formulated to provide outstanding resistance to Partial Discharge and Corona effect making it suitable for all the above key applications. This product exhibits high flexibility and property retention maintaining product performance even after the winding operation.

FEATURES AND BENEFITS

Thermal Endurance	Highest temperature rating in the market for Polyimide/Polyamide-imide constructions with a Thermal Endurance of 265°C per ASTM D2307
Thermoplastic Flow	Exceeds typical enamel systems and most thermoplastics
Solderability	N/A
Heat Shock	Exceeds NEMA MW 16 with 300°C
Windability	Exceeds NEMA MW 16 abrasion resistance requirements and provides high windability because of its internal lubrication and excellent property retention
Electrical	Exhibits excellent resistance to Partial Discharge and Corona effect even after elongation caused during winding process Exhibits increased life expectancy with non-sinusoidal waveforms like inverter applications because of its proprietary Nano particle enamel system even at elevated temperatures
Chemical	Resistant to petroleum naphtha, toluene, ethanol, 5% sulfuric acid, 1% potassium hydroxide, butyl acetate, acetone for 24 hours at room temperature
Stripping Method	Non-solderable product that must be mechanically stripped before soldering, or terminated by means of insulation piercing terminals

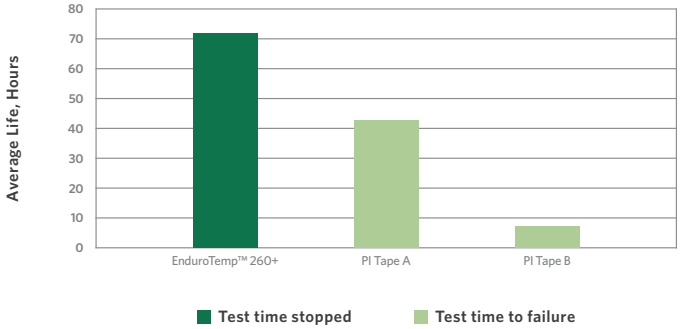
PULSE ENDURANCE TESTING

155°C, 3kV, 20kHz with 18AWG Heavy Build Enameled Wire



PULSE ENDURANCE TESTING

155°C, 3kV, 20kHz with 12AWG Heavy Build Enameled Wire Versus Wraps



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PROPERTIES

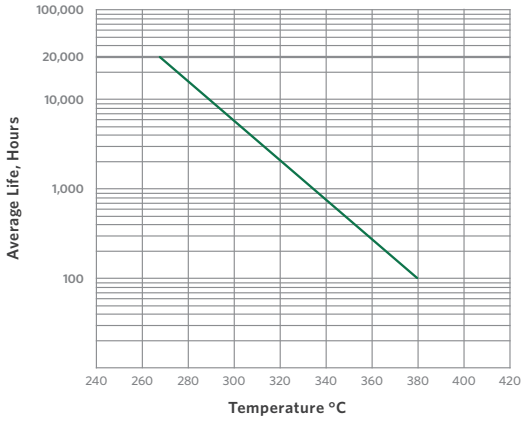
	TEST DETAILS (MW 16)	TYPICAL PERFORMANCE*	REQUIRED PERFORMANCE**
THERMAL			
Heat Shock Resistance	20% Elongation, 3xD mandrel wrap	300°C x 0.5hr, no cracks	280°C x 0.5hr, no cracks
Thermal Endurance	20,000 hrs, per ASTM D2307	265°C	240°C
Thermoplastic Flow	Crossing method, 5°C/minute rise rate	> 500°C, 2kg weight	≥ 450°C, 2kg weight
PHYSICAL			
Abrasion Resistance	Unidirectional Scrape	1,738g	710g min, 835g min avg
	Repeated Scrape	> 115 strokes, 700g	-
Adherence and Flexibility	20% Elongation, mandrel wrap	3xD, no cracks	3xD, no cracks
Coefficient of Friction	-	< 0.06 with external lubricant	-
Elongation	Elongate to break	40%	≥ 32%
Springback	Mandrel wrap	46°	≤ 58°
ELECTRICAL			
Continuity	100 ft, graphite fiber brush	≤ 1 fault @ 1500 VDC	≤ 5 faults @ 1500 VDC
Dielectric Breakdown Voltage	Twisted pairs @ ambient	11,700 volts	≥ 5,700 volts
Dielectric Breakdown Voltage at Rated Temperature	Twisted pairs @ 240°C	7,100 volts	≥ 4,275 volts
Inverter Endurance	200°C, 575 VAC, 4,000 Hz, 10% elongation	300 hours	-
Pulse Endurance	GB/T-21707, 100 ns rise time	> 20 hours	12 hours
Voltage Endurance	150°C, 3,500 VAC, 60 Hz, 10% elongation	> 130 minutes	-
CHEMICAL			
Solubility	Immersed in 60°C Xylene solvent x 0.5hr, needle scrap	Passes	≥ 575g
	Immersed in 60°C Xylene/Butyl solvent x 0.5hr, needle scrape	Passes	≥ 575g

* *Performance data is representative of 18 AWG heavy build magnet wire where applicable.*

** *Requirements for 18 AWG heavy build per NEMA MW 16 except where not applicable.*

THERMAL ENDURANCE

18 AWG Heavy Build CU



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