

EnduroTemp® 260+

Magnet Wire | Winding Wire



| NEMA MW 16-C/MW 20-C | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thermal Class | 260°C |
| Conductor | Copper |
| Shape | Rectangular, Square |
| Insulation Material | Polyimide/Polyamide-imide |
| Size Range | Rectangular: Consult Essex Marketing/ Sales for availability |
| Key Applications | <ul style="list-style-type: none"> Partial discharge environments High temperature applications Automotive HEV/EV applications Traction motors Down hole pump motors |

PRODUCT DESCRIPTION

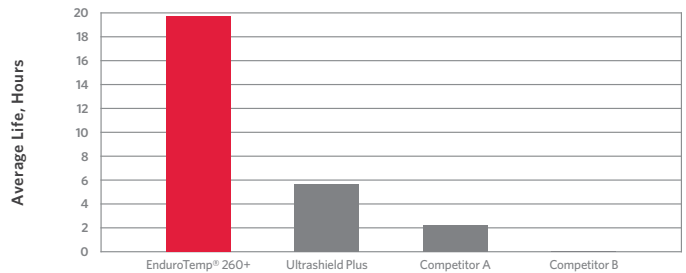
EnduroTemp® 260+ uses Essex proprietary Polyimide formulation combined with a proprietary self-lubricating top coat. This product not only complies but clearly exceeds NEMA MW 16-C/MW 20-C with a Thermal Endurance of 265°C per ASTM D2307. The unique combination also provides high abrasion resistance 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 |
| Heat Shock | Exceeds NEMA MW 16-C/MW 20-C with 300°C |
| Windability | Exceeds NEMA 16-C/MW 20-C abrasion resistance requirements and provides high windability because of its internal lubrication and excellent property retention |
| Electrical | <p>Exhibits excellent resistance to Partial Discharge and Corona effect even after elongation caused during winding process</p> <p>Exhibits increased life expectancy with non-sinusoidal waveforms like inverter applications because of its proprietary Nano particle enamel system even at elevated temperatures</p> |
| 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 |

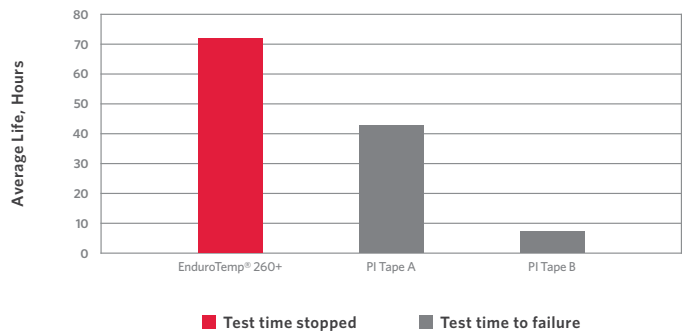
PULSE ENDURANCE TESTING

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



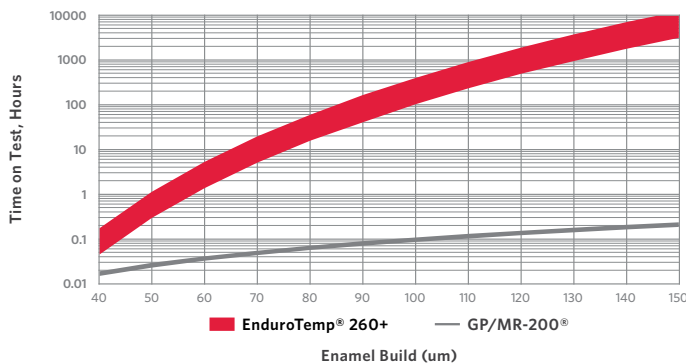
PROPERTIES

| | TEST DETAILS | TYPICAL PERFORMANCE* | REQUIRED PERFORMANCE** |
|------------------------------------------------------|------------------------------------------------------|-------------------------------|-----------------------------------------------------------|
| THERMAL | | | |
| Heat Shock Resistance | 30% Elongation, 280°C x 0.5hr | No cracks | No cracks |
| Thermal Endurance*** | 20,000 hrs, per ASTM D 2307 | 265°C | ≥ 200°C |
| Thermoplastic Flow | 2kg ball point probe method, 5°C/minute rise rate | 405°C | ≥ 300°C |
| PHYSICAL | | | |
| Abrasion Resistance*** | Unidirectional Scrape | 2,100g | ≥ 1,150g avg |
| | Repeated Scrape | 496 strokes, 700g weight | - |
| Adherence and Flexibility | 30% Elongation | No topcoat or basecoat cracks | No cracks |
| Elongation | Elongate to break | 44% | ≥ 32% |
| | Deflection | ≤ 4° | ≤ 5° |
| ELECTRICAL | | | |
| Continuity*** | 100 ft, graphite fiber brush | ≤ 1 fault @ 1,500 VDC | ≤ 5 fault @ 1,500 VDC |
| Dielectric Breakdown Voltage | Shot box | 5,770 volts | ≥ 1,500 volts (3 of 4 values), ≥ 500 volts (4th value) |
| Dielectric Breakdown Voltage at Rated Temperature*** | Twisted pairs @ 240°C | 7,100 volts | ≥ 4,275 volts |
| CHEMICAL | | | |
| Solubility*** | Immersed in 60°C solvent x 0.5hr, 575g needle scrape | Passes | No exposed bare conductor |

* Performance data is representative of 0.102" x 0.204" or 18 AWG heavy build copper magnet wire where applicable. ** Requirements for 0.102" x 0.204" or 18 AWG heavy build per NEMA MW 16-C/MW 20-C where applicable. *** No NEMA test published for rectangular/square magnet wire so performance data shown is representative of 18 AWG.

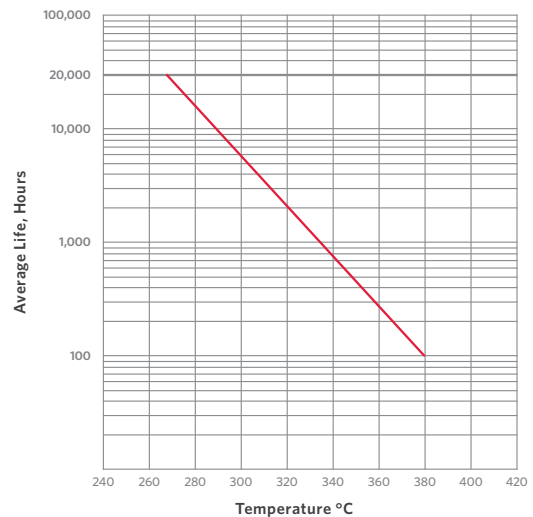
PULSE ENDURANCE LIFETIMES FOR ENDUROTEMP SAMPLES TESTED PER GB/T 21707-2008

(155C, 3 kV, 20 kHz, 100 ns rise time) 18 AWG
95% Predictive Intervals Shown



THERMAL ENDURANCE

18 AWG Heavy Build CU



For a list of product patents, visit essexsolutions.com/product-patents.