Polyflex® 225

Magnet Wire | Winding Wire

Product Data Sheet

NEMA*	Tested for comparison purposes to MW 15-A, MW 18-A, MW 86-A, & MW 87-A
Thermal Class	Class 200°C
Conductor	Aluminum
Shape	Round, Square and Rectangular Conductors
Insulation Material	Polymer Coated
Size Range	Please consult an Essex magnet wire representative for size and build information.
Key Applications	Oil-immersed distribution transformers Utility transformers

* *The product has been tested against NEMA MW 15-A, MW 18-A, MW 86-A, & MW 87-A for comparison purposes only. The following performance data is representative of rectangular Aluminum extruded product.*

PRODUCT DESCRIPTION

Polyflex® 225 is an extruded, high temperature insulated polymer wire which provides excellent compatibility with various industry transformer oils, along with increased dielectrics, winding speeds, and high resistance to mechanical damage from winding processes. The product has a high thermal grade, which helps increase the reliability of the conductor on windings with reduced heat dissipation or high temperature spots. The high thermal grade is also an excellent option for oil-immersed transformers subjected to frequent overload cycles. This product is recommended, but not limited to the following applications:

- Oil-immersed distribution transformers.
- Utility transformers.

FEATURES AND BENEFITS

Thermal Classification	Polyflex® 225 is a Class 200°C material when measured in accordance with the ASTM D 2307 test procedure.
Thermoplastic Flow	260°C, average
Solderability	N/A
Heat Shock	Passes 220°C heat shock
Windability	Polyflex® 225 excels in winding wire applications because of it's superior flexibility and adhesion properties.
Electrical	Polyflex® 225 polymer exhibits high dielectric strength, >5kV per ASTM D 149.
Chemical	Polyflex® 225 is unsurpassed in its resistance to mineral and ester oil types. It is the best magnet wire coating available for these applications.
Stripping Method	Non-solderable product and must be mechanically stripped before soldering, or terminated by means of insulation piercing terminals.
Normal Availability	Round, Square and Rectangular

Please consult Magnet Wire Customer Service for additional sizes (including metric) and build information.

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PROPERTIES

	TEST DETAILS	TYPICAL PERFORMANCE*	REQUIRED PERFORMANCE**
THERMAL			
Heat Shock Resistance	Elongation, 3xD mandrel wrap	20%, 220°C x 0.5hr, no cracks	15%, 175°C x 0.5hr, no cracks
Thermal Endurance	20,000 hrs, per ASTM D 2307	> 200°C	200°C
Thermoplastic Flow	Crossing method, 5°C/minute rise rate	260°C, 2kg weight	≥ 180°C, 2kg weight
PHYSICAL			
Insulation Build	Build = Overall measured - Bare measured	Quad build per NEMA. Other available as requested	-
Adherence and Flexibility	15% Elongation, mandrel wrap	2xD, no cracks	3xD, no cracks
Elongation	Elongate to break	31%	≥ 15%
ELECTRICAL			
Continuity	100% In-line	Passes	-
Dielectric Breakdown Voltage	Shot box @ ambient	7,900 volts	≥ 2,500 volts
Dielectric Breakdown Voltage at Rated Temperature	Shot box @ 120°C	8,128 volts	≥ 1,875 volts
CHEMICAL			
Solubility	Immersed in 60°C solvent x 0.5hr, needle scrape	Passes	No exposed bare conductor
Transformer Oil Resistance (Mineral and Ester oil)	Elongation, mandrel wrap, 150°C for 4 weeks	Passes	15%, 3xD, no cracks
	Twisted pairs, 150°C for 4 weeks	7,900 volts	≥ 5,700 volts

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

** *Requirements for 18 AWG heavy build per NEMA MW 86-A or heavy build per NEMA MW 87-A where applicable.*

info.northamerica@essexsolutions.com | 260.461.4000
EssexSolutions.com