

# Polytermacon/Al-C<sup>®</sup> Magnet Wire

## General description

The POLYTERMACON/Al-C<sup>®</sup> magnet wire is basically a POLYTERMACON/Al<sup>®</sup> wire that is coated with a thermoplastic self-bonding film, capable of producing a strong adhesive force among the turns of a coil when heat is applied. This adhesive force, once obtained, will be resistant to overheating and to solvent attacks.

POLYTERMACON/Al-C<sup>®</sup> wire is offered with a copper conductor and is made in two types, which correspond to two insulation builds: Type 1 and Type 2.

The POLYTERMACON/Al-C<sup>®</sup> magnet wire is recommended for use in electrical equipment with a thermal class of up to 180 °C.

## Specifications

UL Designation	Thermal class (°C)	NEMA MW-1000
PAIC 200 C180	180	MW 102
PAIC 200 C200	200	N/A

Meets the requirements set forth in the following standards:

- NEMA MW 1000, MW 102
- UL recognition under file E102627

## Characteristics

- Ease in forming self-bonding coils
- Great winding ease
- Resistant to heat shock
- High dielectric strength
- Conserves its degree of dielectric strength, even at high temperatures

## Range of gauges

Insulation build	AWG	mm
Type 1	21 - 34	0.723 – 0.160
Type 2	18 - 32	1.024 – 0.202

## Principal applications:

### AUTOMOTIVE

- Alternators
- Clutch for A/C

### ELECTRONICS

- Coils in color TV yokes

### GENERAL APPLICATIONS

- Diverse types of self-bonding coils

**TYPICAL TEST VALUES FOR A TYPE 2 POLYTERMACON/AI-C® 24 AWG**

Typical values only, not intended to be used as a specification

TEST	SPECIFICATION (ANSI / NEMA MW 1000) MW 102	TEST METHOD	RESULT
<b>Electrical</b>			
Dielectric strength	≥ 5250 V	NEMA	14500 V
Continuity	≤ 7 allowed discontinuities per 100 feet	NEMA	0
<b>Mechanical</b>			
Elongation	Minimum of 30%	NEMA	36%
Adherence & Flexibility	15% sudden jerk, rolling wire 10 times around mandrel equal in diameter to the wire, visual inspection, no cracks or visible bare copper	NEMA	Passes
Springback	≤ 53	NEMA	45°
Bond Strength (lb)	≥ 30 for 18 AWG	NEMA (b)	≥ 30 for 24 AWG
<b>Chemical</b>			
Solubility	30 minutes immersion at 60°C in Xylene, and Xylene/Butyl Cellosolve 50/50, after drying sample for 10 minutes @ 150°C	NEMA	Passes
Curing	10 minutes immersion in alcohol/toluene 70/30 boiling solution		Passes
<b>Thermal</b>			
Thermal stability	20,000 hours @ 180 °C	ASTM	180 °C
Heat shock	20% sudden jerk, rolling wire 10 times around mandrel 3 times the diameter of the wire before heating ½ hour @ 200°C	NEMA	Passes
Thermoplastic flow	≥ 300°C	NEMA	411 °C
Cement heat test	No separation must appear between the turns of a coil with a 4.7 kg weight applied during 5 seconds after heating for 1 hour @ 150°C		Passes