Soldacon-N® Magnet Wire

General description

The SOLDACON-N® magnet wire is manufactured by applying a Polyamide (Nylon) coat over the base insulation of SOLDACON® (Polyurethane) wire. This results in a magnet wire insulation that combines the excellent electrical and solderability characteristics of the SOLDACON® wire, with the tenacity, winding ease, and scrape resistance of the Polyamide (Nylon) overcoat. It can be used in applications such as serial armatures, toroids, bobbin windings, or in those cases where winding ease and solderability is required.

This product is manufactured in three insulation builds – Single, Heavy and Triple, and is offered in either Copper or Aluminum conductors.

The SOLDACON-N® magnet wire is recommended for use in electrical equipment with a thermal class of up to 180 °C.

UL Designation	Thermal class (°C)	NEMA MW-1000
SNP 180	180	MW 83
SPNH 155 *	155	MW 80
SNE 155	155	MW 80
SN 155	155	MW 80
SN 130	130	MW 28

Specifications

Meets the requirements set forth in the following standards:

- NMX-J-483
- NEMA MW 1000, MW 28, MW 80 and MW 83
- IEC-60317-19 and IEC-60317-21
- UL recognition under file E102627

Characteristics

- Resistant to high temperatures
- Solderability without the need to remove the insulating film
- Excellent winding ease
- Excellent electric characteristics
- High resistance to thermoplastic flow
- Is compatible with most impregnation varnishes
- High resistance to abrasion
- Resistant to heat shock
- Pin-Hole free, under specific requirement

Range of gauges

Copper Conductors		
Insulation build	AWG	mm
Single	8 - 46	3.264 - 0.040
Heavy	8 - 44	3.264 - 0.050
Triple	14 - 40	1.628 - 0.080

Aluminum Conductors		
Insulation build	AWG	mm
Single	15 - 30	1.450 - 0.255
Heavy	20 - 30	0.812 - 0.255

Principal applications:

AUTOMOTIVE
- Alternators
- Field coils
- Starter motors

ELECTRONICS
- TV yoke coils
- Horizontal output (Fly back) transformers
- Inductors (Choke)

ELECTRODOMESTIC APPLIANCES
- Small motors in general

SPECIAL TRANSFORMERS
- Ballasts
- Measurement coils
- Small transformers, electrical machines, controls

LOW POWER AND FRACTIONAL MOTORS
- Open

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TYPICAL TEST VALUES FOR A SOLDACON-N® HEAVY 18 AWG WIRE

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

TEST	SPECIFICATION (ANSI / NEMA MW 1000) MW 83-C	TEST METHOD	RESULT
Electrical			
Dielectric Strength	≥ 5130 V	NEMA	10100 V
Continuity	≤ 5 discontinuities per 100 feet @ 1500 V	NEMA	0 (Zero)
Mechanical			
Elongation	Gradual elongation until rupture, 32% minimum	NEMA	36%
Adherence and Flexibility	20% sudden jerk, rolled 10 turns around a mandrel 3 times the diameter of the wire, visual inspection, no cracks or exposed conductor	NEMA	No cracks
Springback	≤ 58º	NEMA	54º
Unidirectional Abrasion	Average of 3 measurements @ 0°, 120° and 240°; ≥ 1150 grams.	NEMA	1300 grams
Solderability	Maximum immersion time, 10 seconds @ 430ºC	NEMA	6 s @ 390 °C
Chemical			
Pin Hole*	Not specified	JIS C3003	0 (Zero)
Solubility	Not soften sufficiently to expose the bare conductor	NEMA	Passes
NEMA			
Thermal			
Thermal Stability	20,000 hours @ 180 °C	NEMA	180 ºC
Heat Shock	20% sudden jerk, rolled 10 turns around a mandrel 3 times the diameter of the wire, before heating for ½ hour at 200 ºC	NEMA	Passes
Thermoplastic Flow	≥ 225 ºC	NEMA	290 ºC

** Pin Hole free under specific requirement*

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