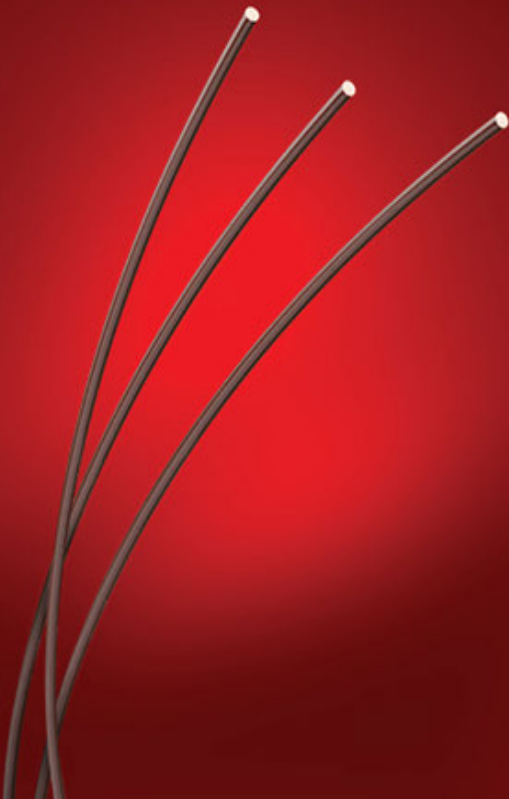


# NANOSHIELD SD



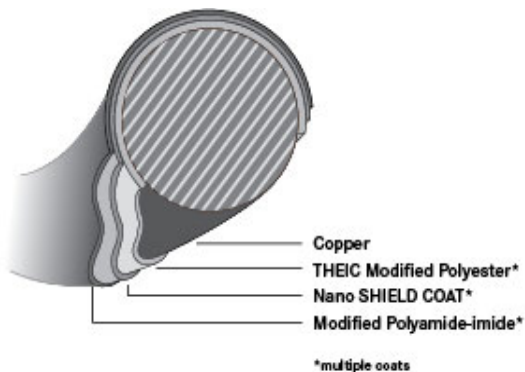
Thermal Class: 200°C

## Features and Benefits:

- Exceptional resistance to voltage stresses generated by high frequency, rapid rise time, voltage spikes typically introduced by IGBT-type inverters. Motor life is increased significantly over standard MW-35C magnet wire under these voltage stresses and across a wide temperature range
- Substantial insulation protection against transient spikes, high frequencies, elevated voltage levels, and short rise time pulses without increasing insulation thickness
- Enhanced resistance to thermoplastic flow (cut-through), surface abrasion and heat shock
- Enhanced Dielectric strength
- Exceptional flexibility without embrittlement, due to the significant reduction in size of the shield coat particles to the nano level
- Excellent resistance to heat and solvent shock conditions encountered in varnishing and encapsulating processes
- ROHS & REACH Certified
- 100% in-line tested for HVC and bead prevention

## Typical Applications:

Hand wound and high speed windings with difficult insertion and winding characteristics for inverter-driven motors, high frequency transformers, and high voltage motors



## General Information:

References are provided for comparative purposes

### Round

NEMA: MW 35-C

## Availability

Heavy
12-28 AWG

## Typical Properties:

This data is typical of 18 AWG copper, heavy build insulation only. It is not intended to be used to create specification limits.

# NANOSHIELD SD

Thermal Endurance		
		>200°C
Thermoplastic Flow	minimum	typical
	300°C	350°C
Heat Shock (20% 3X)		
	1/2 hr at 220°C minimum no cracks	
Solderability		
	Not designed to be self-solderable	
Stress Relief Temperature		
		160°C

Mandrel Flexibility	minimum	typical
After Elongation	20% 1x OK	25% 1x OK
After Snap	1x OK	1x OK
Unilateral Scrape	minimum	typical
Avg. of 3 sides	2000 gms	2000 gms
Dynamic C of F	minimum	typical
		0.06

Resistance to Solvents		
After 24 hrs @ RT		Xylene 50/50 Cellosolve/Xylene Perchloroethylene 1% NaOH 28% Sulfuric Acid Gasohol
Retained Dielectric		
72 hrs Exposure + 300°C Conditioning		3.5 kV
R-22 Extractables		
		.08%

Dielectric Breakdown		
@RT		11.0 kV
@ 200° C		7.0 kV
Dielectric Breakdown	minimum	typical
	5.7 kV	11.0 kV
Corona Inception Vltage	minimum	typical
		580V
Pulse Endurance Test		
	20,000 Hz, 2000 V, 0.025 microsecond rise time 150°C, 50% Duty Cycle - Twisted Pairs 18 HTAIH Reference = 600 seconds 18 HTAI NS > 80,000 seconds	
Pulse Endurance Index >100		
	Life of product/life of same size and build MW- 35 (reference)	
High Voltage Continuity		
NEMA @ 1500 V DC		5 faults / 100 feet max
Typical @ 2000 DC		0-1 faults / 100 feet max