

NANOSHIELD SD

Rea Material Code: HTAINS

Rea Insulation Code: 2G

Insulation Material

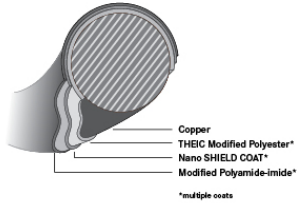
Description: Theic Modified Polyester + Nano-shieldcoat + overcoated with Polyamide Imide (AI)

Thermal Class: 200

Shape: Round

Conductor: Copper

NEMA Specification: MW 35-C



MARKETS

Motors/Generators:
General
Comm & Ind
Generator

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

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 (cutthrough), 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

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.

THERMAL

Thermal Endurance		
		>200°C
Thermoplastic Flow		minimum
	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	

MECHANICAL

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

ELECTRICAL

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

CHEMICAL

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
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R-22 Extractables

.08%