



Shop “Tech Talk” June, 2007



Q. Last month you spoke about the Insulation System in a motor and you talked about Temperature Class B ,F and H. Can you explain what this Class System entails?

A. No problem. The temperature Class System is all to do with the Winding Materials that are used in the Winding of Electric Motors and Machines. In general the lowest Temperature Product used determines the Class for the whole winding system.

The following components are used in a typical winding of an electric motor @ Holland Industrial

	<u>Component</u>	<u>Purpose</u>	<u>Product Name</u>	<u>Manufacturer We Use</u>	<u>Temperature Class Rating of Product (Max. Operating Temp.)</u>
1	Slot Liner Insulation, the first component inserted into the stator winding slot	Insulates bare metal stator core (Ground) from the insulated magnet wire	Nomex Type NMN	DuPont	Class H, Class 180
2	The Insulated Magnet Wire is the next component used	This wire carries all the current the motor uses.	Thermaleze QTW Inverter Duty Rated	Phelps Dodge	Class N, Class 200 (A Class Higher than Class H)
3	Phase Insulation	This insulation is inserted between adjacent coils in the different phase groups of the 3 phases of the motor winding	Nomex Type NMN	DuPont	Class H, Class 180
4	Slot Wedge Insulation	Used to cover the stator winding and keep winding from moving out of slot	Nomex Type NMN	DuPont	Class H, Class 180
5	Heat Shrinkable Lacing Cord	Used to tie down the end turns of the stator winding to ensure maximum rigidity of the winding	Nomex Cord	Breyden 5300 Series	Class H, Class 180
6	Flexible Tubing/ Sleeveing	Used to insulate the ends of the stator coil turns, where the magnet wire is connected to the motor lead wire	Silicone Rubber Coated Braided Fiberglass Sleeveing	Sofanou NU-Sleeve SG-200	Class H, Class 180
7	Motor Lead Wire	Used to connect the grouped individual strands of magnet wire to the main motor power leads	EXAR SFX or Belden (Silicone Rubber)UL AWM Style	Champlain Cable Belden Wire	Class H, Class 180
8	Varnish	The overcoat which bonds the whole winding system and makes it a rigid mass & protects it from moisture chemicals and vibration.	Epoxy 7-619 (VPI) Or Polyester 709	Ranbar Von Roll	Class H, Class 180 Class H, Class 180

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