NORPLEX MICARTA

High Performance Thermoset Composites

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Phenolic Resin – Cotton Fabric Substrates
Norplex-Micarta NP300 Series

NP300 Series

The NP300 series of phenolic-cotton composites are strong, economical, and resistant to heat and chemicals. They have excellent machining qualities and provide outstanding performance in a wide range of applications.

The NP300 series includes a range of products that are optimized for different tasks. In some cases, special additives enhance key performance properties:

- NP313, NP313HT, NP315, NP319, NP322, NP325, NP344, and NP347 contain solid lubricants to reduce friction;
- NP310E and NP320E contain proprietary additives that provide superior electrical insulation and moisture resistance;
- NP310HT is engineered to reduce shrinkage and enhance performance in higher temperature environments, and to improve chemical resistance.

The NP300 series of thermoset composites are made with various weights of cotton fabric and several different phenolic resin systems. These combinations yield cost effective products with excellent machining qualities and outstanding performance in a wide range of applications.

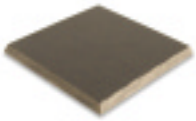
Phenolic resins are fundamentally strong and resistant to high temperatures and chemicals. They are formulated to thoroughly penetrate the reinforcing fabric, which can vary from fine linen grade to a tough, heavy-weight canvas depending on the application requirements.

The final laminated thermoset composites are easier to machine than metal. They do not spark when struck – a key property that enables them to be used in explosion-proof environments. Cotton fabric composites are less abrasive than fiberglass-reinforced materials, resulting in longer tool life. In addition, parts made of phenolic-cotton composites deliver a high MTBF (mean-time-before-failure), quieter operation in lubricated or non-lubricated applications, and long life in wear-prone applications.

Phenolic-cotton fabric composites are ideal for fabricating a variety of rigid parts, including gears, pulleys, rollers, and guides that must operate in high-friction mechanical assemblies, such as bearings, clutches, and gear trains. Phenolic resin retains its chemical structure and its rigidity even at high temperatures. Therefore, the NP300 series provides excellent performance, even in high-temperature refractory and foundry environments, and when exposed to acids, cleaning solutions, and lubricants in the food processing industry.

NP310

A cost-effective blend of a medium-weight cotton canvas fabric and a general-purpose phenolic resin system, this laminate is ideal for machining into general-purpose gears, pulleys, rollers, and guides. The canvas reinforcement is less abrasive and causes less wear on components it contacts than do fiberglass-reinforced alternatives. A typical use is for engine timing gears, bushings, and bearings.



NP313

A friction-fighting composite, it is enhanced with a premium solid lubricant to reduce wear. This material is ideal for fabricating parts, such as gears, pulleys, rollers, and guides that are subjected to friction and wear, and are required to operate cleanly. It is non-conductive at low voltages and suitable for applications requiring electrical insulating properties.

NP320E

Made with the same fine-weave cotton fabric as NP320, it contains a proprietary electrically insulating phenolic resin to manufacture non-conductive machined parts. In addition, NP320E exhibits improved moisture resistance properties over NP320.

NP310E

This product combines a domestic cotton canvas fabric and a proprietary phenolic formulation to provide excellent electrical insulating properties and superior moisture resistance. NP310E is ideal for machining gears, pulleys, rollers, and guides, and control boards that must be electrically insulated.

NP318

This product is engineered specifically for post-forming applications by the customer. It consists of a cotton fabric and a modified phenolic resin system that permits the material to be fully cured, but still has the capability of being post-formed into a curved shape. The material is heated, formed, and then held in a system to maintain the shape until it is cooled at room temperature.

NP310AG

The NP310AG is a woven cotton fabric and a specially engineered phenolic resin system designed to meet the non-after-glow requirements of NEMA C for aircraft parts (no red-hot, glowing material remains after exposure to fire), but is not a post-forming material. NP310AG meets UL94 V-0 in thicknesses of .250" and above.

Industry Standards

Norplex-Micarta Grade	ANSI/ASTM NEMA LI-1-1998	Military MIL-I-24768/... [Type]	IEC 60893 Part - 3 - "Sheet"- "Type"
NP310	C	/16 – FBM	– 4 – PF CC 201
NP310E	CE	/14 – FBG	– 4 – PF CC 203
NP313	---	---	---
NP318	CF	---	– 4 – PF CC 203
NP320E	LE	/13 – FBE	– 4 – PF CC 305
NP310AG	C	---	---

Refer to our web site **www.norplex-micarta.com** for a complete list of our products.

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