Electric Motor

Fabrico is the leading provider of electrical insulation materials used to manufacture and repair electrical equipment. From wedges and slot separators, to slot liners and phase separators, Fabrico offers more than 30 years of experience in a variety of applications.

Our finished products are fabricated from electrical grade papers, films, coated cloths, laminates, and tapes. We convert widely used electrical insulation materials, such as DuPont's Mylar® film and Nomex® paper. In fact, we are one of the largest converters of Nomex® in North America, as well as one of the largest converters of DuPont Kapton® films, 3M™ IPT papers and laminates, 3M and Permacel electrical tapes, and Von Roll laminates for the electrical OEM and repair markets.

Through processes such as close-tolerance slitting, cuffing, die cutting, and heat forming, we produce discrete and multi-layer custom parts. Besides excellent dielectric strength, these parts provide temperature resistance, and the durability to resist tearing and puncturing during assembly and operation.

Products for Electric Motors Include:

Slot liners. The primary insulation between conductors and steel motor components. To produce slot liners, Fabrico can utilize our patented Slit-n-Score® process to convert flexible materials into slit rolls, or into sheets and cuffed coils. Where needed, we can also provide cut-to-length slot liners.

Slot separators. Thin, insertable papers and laminates that keep motor coils from touching each other. To produce slot separators, Fabrico uses slitting, heat forming, and cut-to-length converting processes.
Phase separators. Flexible insulation that is inserted between coils. They must be easy to insert, and in some cases able to absorb varnish, which helps to produce a uniformly rigid structure. Fabrico provides phase separators in sheets, die-punched “phase ladders,” with and without adhesive backing, and in rolls that can be slit to specified widths.

Wedges. Stiff paper or laminate that holds slot contents in place. Dimensions vary depending on slot size. Like separators, wedges are heat-formed into shape and then cut to required lengths.

EIS also sells a wide variety of electrically conducting and insulating materials that provide dielectric strength, temperature resistance, and chemical/moisture resistance. Included are:

**Lead sleeving.** Provides electrical insulation for connections of the magnet wire to the lead wire. It must be flexible enough to bend, but also stiff enough to easily slide over wires. Lead sleeving is usually a composite tube consisting of braided fiberglass combined with a resin coating.

**Coil nose/connection tape.** Pressure-sensitive tapes slit into different widths. A wide variety of substrates and adhesives are available to provide enough strength and adhesion to ensure that the tape survives the rigors of the motor application. Non-pressure-sensitive tapes are also available in woven cotton, fiberglass, and polyester/fiberglass constructions.

**Tie cords.** Also known as lacing cords, used to tie coils tightly together so they do not move when the motor is energized. Made of a wide variety of materials, tie cords can be actual cords or braided tapes. A key property is adequate tensile strength to prevent breaking. Some tie cords are designed to shrink when heated, which tightens their hold on motor coils.

**Bracing.** Also known as surge rope, it is a b-stage composite used to secure the whole mass of motor coils. When the resin in the composite hardens, it creates a rigid structure.

**Lead wire.** Insulated flexible conductors used to connect motor windings to a power source. Can be purchased in bulk reels or drums, or shorter length spools at the request of our customers. EIS sells a complete line of lead wire.

**Magnet wire.** Copper or aluminum wire that makes up the motor coils. The choice of magnet wire and lead wire for a motor depends on a number of factors, including the necessary dielectric strength and temperature resistance, the motor’s environment, and the size needed to carry the amount of electrical current required by the application. EIS sells a wide variety of magnet wire types and sizes.

**Resins and varnish.** Used to coat and impregnate the motor windings and steel laminations to bond the entire unit together. The wound assemblies are either dipped in varnish, or processed in a Vacuum Pressure Impregnation cycle, then baked and cured. The result is an outer coating that helps protect the windings and steel from the environment, and impregnation that helps prevent movement of the windings, helps eliminate air voids, and provides additional electrical insulation.