ELM INDUSTRIES, INC.

< HERITAGE CAPABILITIES QUALITY CONTACT US >

Precision thermoset molding since 1967

High-performance
Electrical Connector,
Diallyl Phthalate
.75" tall

Elm Industries, Inc. - Since 1967, your source for Precision Thermoset Molding and Thermoset Extrusion.

Transfer, Compression and Extrusion Molding of Phenolics, Diallyl Phthalates (DAP), BMC, Epoxy and Silicone Compounds per astm d-5948 (MIL M-14) Specification and Glass Reinforced Thermoset Silicone for Nuclear Applications.

Specializing in insert molding, short run, prototyping and product development.

Few thermoset molders can claim three generations and more than fifty years experience in the industry; Elm Industries is that rare exception. George Martin, Jr. founded the company in 1967 upon returning from service in the United States Army. Over the past forty years, Elm Industries, Inc. has become a leader in precision thermoset molding and thermoset extrusion for all custom applications.

When family patriarch and thermoset plastics pioneer George Martin, Sr. joined his son's firm upon its founding, he brought a wealth of expertise to the young company – he had started Holyoke Plastics in 1945 and served as President of the Society of Plastics Engineers, a national trade group, in 1960.

George Jr.'s brothers, Jack and Ken eventually joined the business and currently serve as vice presidents.

George's son, Michael, and Ken's son, Jesse, are part of the third generation to play an active role in the firm.

Thermoset molding is more art than science.

GEORGE W. MARTIN, SR.

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Elm Industries runs an extensive array of thermoset materials, from glass and fibre-filled phenolics, to diallyl-phthalates, urea, epoxy, and BMC. Our customers include the military, electronics and aerospace industries.

We can run transfer and compression molding from your conventional tooling or thermoset hand mold, from .1 gram to three pounds. Tight tolerance and zero tolerance parts are some of the work we love best.

Short run, prototyping and product development work is also welcome

Plastics
- Deconstructed

Thermosets are a group of engineering plastics particularly well suited to demanding requirements. The common thermoset materials include Phenolics (Bakelite), Diallyl Phthalates (DAP), Epoxies, and Polyesters. These materials offer outstanding performance, proven through decades of successful use. They also offer cost savings as a replacement for metals and are an alternative to plastics that offer similar performance but at a greater cost.

Thermoset plastics have ability to withstand heat and pressure for long periods of time without failure. The dimensional stability, creep resistance, chemical resistance, stiffness, and high temperature capabilities make them the number one choice where reliable performance in adverse conditions is required.

Thermoplastics can be heated to liquid then cooled in any desired shape, similar to melting a wax candle and then cooling back to a solid. Molecules in thermoset materials, when exposed to heat and pressure, interconnect and cross link forming new molecules. This chemical reaction is irreversible; the thermoset cannot be remelted. For applications requiring precise dimensional tolerances and low deformation under load, thermosets are an excellent choice.

Other preferable characteristics of thermoset materials are its excellent impact resistance and extraordinary electrical insulating properties. Some engineered thermoplastics claim high temperature resistance; however, in this area, these materials cannot compete with thermosets and may run the risk of deformation under load when approaching their heat deflection temperature.

Phenolics and Epoxies are commonly selected for metal replacement. The ability to mold these materials into complex shapes is cost effective, eliminating the need to machine features

of a design. Also, molding features in lieu of machining, permits closer tolerances. Dimensional stability of these materials insures that close tolerances can be maintained and repeatable within ten thousandths of an inch.

Requirements for component performance in harsh environments in the electrical, aerospace, nuclear and military applications are satisfactorily met by thermoset plastics. The range of properties of thermoset materials is diverse. Epoxy carbon fiber materials achieve extremely high strength and Phenolics have temperature resistance of 450 degrees F and Silicones with even higher.

Basic knowledge of thermoset plastics capabilities can help to decide which material is best suited for a project on both an economic and performance basis. These compounds have not only survived in the ever-expanding plastics industry but also have evolved into the elite molding materials within the field.

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When you're running parts for the military, electronics, nuclear and aerospace industries, there's no margin for error. The part needs to be perfect and it needs to be on time. We pride ourselves on doing the job right the first time, and we've been recognized in the industry many times for our high standards.

MIL-I-45208 & MIL-I-45662 APPROVED SYSTEMS

AS-9003 std

SPC QUALITY ASSURANCE

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